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A COMPUTER BASED DATA MANAGEMENT
SYSTEM FOR AUTOMATING THE AIR FORCE
VEHICLE MASTER PLAN

THESIS

Hans Garcia
1st Lt, USAF

AFIT/GLM/LSM/89S-23

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AFIT/GLM/LSM/89S-23

A COMPUTER BASED DATA MANAGEMENT SYSTEM FOR
AUTOMATING THE AIR FORCE VEHICLE MASTER PLAN

THESIS

Presented to the Faculty of the School of Systems and Logistics
of the Air Force Institute of Technology

Air University

In Partial Fulfillment of the
Requirements for the Degree of
Masters of Science in Logistics Management

Hans Garcia, B.S.

First Lieutenant, USAF

September 1989

Approved for public release; distribution unlimited

Acknowledgements

This thesis was requested by the Program Director of the Vehicle Management Section at Warner Robins ALC in the hope that some of his section's microcomputers could be put to better use and his personnel could spend less time on the manual transposing and calculations of numbers used in tracking a select group of vehicle.

There were two area in which I had very little experience when this undertaking began: database programming and Air Force vehicle management. So, after many hours of debugging and re-working, AVMP, the Automated Vehicle Master Plan is complete with some very positive results made available to an Air Force office which will hopefully benefit from the effort.

I wish to express my sincere appreciation to two of AFIT's finest who I had the pleasure of working with on this project. First, Lieutenant Colonel John M. Halliday, my thesis advisor, who directed my well-intentioned efforts into working smarter, not harder. "Hans, don't reinvent the wheel" and "ask Phil" will echo in my head for some time to come. Second, Captain Phillip H. Beard, new to the AFIT faculty, has shared with me his contagious enthusiasm for programming during the last six months. Phil has generously provided his time and resources in helping me tackle the problems encountered during all phases of the code writing.

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Abstract

The purpose of this study was to develop a computer based database management system which could be used to automate the labor-intensive tasks performed by vehicle program managers at Warner Robins Air Logistics Center. With the introduction of the Air Force Vehicle Master Plan in May 1989, Program Managers (PMs) now had a single source of information on the vehicle fleet, to be used in developing, justifying and prioritizing the vehicle programs required to meet the Air Force Vehicle needs.

Five research questions were addressed in determining the cost, training and equipment advantages to the Air Force by automating such new procedures. The research confirmed that the methods used by the PMs could definitely be supplemented by the use of a microcomputer based program which could be run on existing equipment.

The author was able to automate the USAF Vehicle Master Plan and developed the Automated Vehicle Master Plan (AVMP) using Ashton-Tate's dBase III PlusTM. The original AVMP maintained 29 sortie-generating vehicle types on file.

The author designed, tested, debugged and tailored the final product into a stand-alone DBMS applications program which can be used on any IBMTM-compatible microcomputer, operating on a hard disk system or from a single 5.25 inch

floppy disk. The appendices include a complete listing of the program code, a user's manual, and a tutorial to assist the novice user.

Although written for WR-ALC/MMVV, the program can be used at a MAJCOM or base level and allows for expansion to an estimated 200 vehicle types. Routines to add, edit and delete vehicles are included as well as the capability to produce on-screen and printed reports from the vehicles on file.

A COMPUTER BASED DATA MANAGEMENT SYSTEM
FOR AUTOMATING THE AIR FORCE
VEHICLE MASTER PLAN

I. Introduction

The German scholar, mathematician, and philosopher Gottfried Wilhelm Leibniz wrote: "It is unworthy of excellent men to lose hours like slaves in the labor of calculations which could be safely relegated to anyone else if machines were used." (10:3) In recent years, the ability to perform complex calculations, and store large amounts of data has been made available to a large section of the population and certainly to many managers, especially Air Force middle managers. Today, microcomputers or personal computers (PCs) perform tasks which only a few years before were possible only on large, expensive main frame computers.

Mass production of hardware and an increase in the number of new entrants into the software market have caused prices to decline dramatically in recent years. In the Air Force, units have access to PC's such as the ZenithTM 248 and an assortment of compatible software which carry out word processing, electronic spreadsheet and database functions. These items are available through the General Services Administration (GSA) catalog ordering system or through base supply (9:40).

Computers are ideally suited to handle repetitive tasks (1:2). Managers have instant access to information needed to formulate a decision. Information processed on PC's can be transferred to and from other PC's or even on-line mainframe systems. Handwritten information which formerly was accessible to a select few and limited in distribution is now available through telephone transfer of data. The 'micro' or PC also has the advantage that the system is not being used by anyone other than the operator. Therefore, "all resources available to the system are available to the operator with no waiting." (13:37)

One class of especially useful software is the database management system (DBMS). Databases, or collections of information structured in a defined format, are particularly well-suited for computer application. Information in a database is organized by categories which the programmer sets up during program formulation. Once the information is "loaded" or entered into the database, it can be extracted, re-grouped, or manipulated into a product that will benefit the end user. A very basic example is a telephone directory. Once filled in, this "database" can be used to recall information by last or first name, by city or state, by postal area (zip code) or by phone number. Information can be subsequently sorted alphabetically or numerically in ascending or descending order (18:107).

The terms data base and DBMS are not synonymous. The data base is the conceptual resource of the firm, and the DBMS is the software system that manages that resource. (10:276)

The purpose of this thesis is to examine the appropriateness of using a PC-based database management system for a process used in the planning, acquisition and depot repair strategies of Air Force vehicles. Warner-Robins Air Logistics Center (WR-ALC) has an office which seems ideally suited for computer application. At the Vehicle Management Division/Materiel Management Directorate (VMD), System Program Managers (PMs) manage the Air Force Vehicle Management Program. The current Air Force vehicle fleet of over 124,000 vehicles is broken down into five "family groups." The Vehicle Management Division has identified a unique list of 29 different types of equipment within the five family groups which directly support flying (sortie-generating) operations.

Air Force Vehicle Master Plan

These vehicles are managed in accordance with the Vehicle Master Plan (VMP), released on 31 May 1989, which covers the following five family groups:

1. Crash/Fire
2. Refueling
3. Snow Removal
4. 463L Material Handling
5. Aircraft Towing

The master plan sets up a profile, by vehicle type within each family, which addresses requirements versus assets on hand for the current year and a five-year projection of procurement and depot action for each vehicle type. Each vehicle type is filed separately and maintained by eight program managers (PMs) at Warner-Robins ALC, who manually update all changes to vehicle authorizations and assets-on-hand. The combined update is reconciled semi-annually by the Systems Program Manager. Information provided is subsequently used in budget formulation and asset allocation (12).

Research Questions

Vehicle PMs manually update the figures used to determine allocations of new vehicles to Air Force units. The labor-intensive process of updating the status of each vehicle type takes approximately three to four hours per vehicle group (12). What can be done to improve the quality and timeliness of the vehicle support provided to Air Force units by vehicle program managers at the procurement level? How can the procedures presently used by Air Force vehicle program managers for assigning new vehicles to individual units be automated to reduce manpower costs and improve the accuracy and timeliness of information provided to MAJCOMS?

To accomplish the research objective, the following five questions were asked and answered:

1. What procedures at the program manager level are excessively labor intensive and could therefore be automated, increasing productivity and improving mathematical accuracy?

2. Which automation tool would accomplish this at a reasonable cost to the Air Force?

3. Would automation at the microcomputer level have a definite advantage over the present system?

4. Would additional equipment and training be required by the end-users?

5. Can applications programs be developed to automate labor-intensive procedures and provide vehicle program managers with a fast, accurate method of adding, deleting, modifying, and extracting data required by MAJCOMS for allocating vehicles to units throughout the Air Force?

Limitations

This thesis does not deal with any classified information nor does the resulting computer application provide any security measures that would be appropriate to handle classified information. The computer applications program automates the Vehicle Master Plan (VMP) and allows the vehicle systems program manager at WR-ALC to obtain information updated by the different program managers handling the five vehicle "family groups." The program

addresses the 29 special-purpose vehicles within the five groups identified in the VMP profiles.

Report Organization

This report is divided into five chapters. Chapter 1 provides an introduction to PC's, database systems and the Air Force Vehicle Management Program. Chapter 2 provides a review of the literature on database systems and the methods presently employed at WR-ALC's Vehicle Management Office. Chapter 3 provides the methodology for the research. Chapter 4 examines the specific automation procedures and discusses Program Manager (PM) testing and implementation procedures. Chapter 5 provides conclusions and recommendations for further automation programs. Finally, the appendices contain a data dictionary, system program code, a user's manual, and a program tutorial.

II. Review of the Literature

Air Force Vehicle Management

Air Force vehicles have been designated for selective management by HQ USAF. To accomplish this, vehicles are reported by individual registration numbers. This reporting program has been designated as the registered equipment management (REM) program. A REM manager is designated at base and command levels. The assignment of vehicle registration numbers and the management of the REM master file is the responsibility of the Air Force Logistics Command (AFLC), more specifically, Warner Robins Air Logistics Center (WR-ALC) (4:19-1).

Program managers (PMs) at WR-ALC add new vehicles entering the AF inventory from the manufacturers to the REM master file by registration number.

Vehicles with REM reportable registration numbers will be accounted for in the AF equipment management system (AFEMS), WR-ALC/MMTDV will be responsible for keeping chief of supply (COS) offices/MAJCOM REMS Managers informed of reportable status of items through the publication of the Vehicle Management Index File, TO 36A-1-1301. This contains REM reportable vehicles by national stock number (NSN), interchangeability and substitute (I&S) grouping and criteria status code.(4:19-11)

The PMs advise MAJCOM REMS Managers of their command's vehicle allocations based on approved procurement plans and

other asset availabilities. Vehicle registration numbers identify the model year or actual year of manufacture, the design type, basic application, and sequence number within each identification group. When identifying vehicle types associated with specific MAJCOM's, the program managers use the more general NSN. The "Worldwide Vehicle Requirements Summary-NSN Sequence" breaks down all the vehicles in the Air Force by MAJCOM. It details the command's previous quantity authorized, the quantity presently authorized, quantity on hand, quantity in-transit from the manufacturers (within 90 days of receipt), and total assets. It also lists quantities by replacement priority and life expectancy of presently assigned vehicles. (23:850)

PMs must also track the DEPOT or extensive overhaul maintenance of MAJCOM vehicles. The replacement criteria for a unit receiving a new vehicle will depend on a combination of all these factors. New vehicles are put in service and tracked thereafter during their useful life. The decision to retire a vehicle is made when it is no longer economically feasible to maintain that particular type or model (age, lack of parts etc.). The decision is made by MAJCOMS who follow recommendations proposed by the installation transportation commander. The MAJCOMS' inputs to WR-ALC affect the allocation process for the following year (4:19-5).

The program managers have at their disposal an on-line REMs data bank which is compiled at McClelland AFB from input submitted by individual Air Logistics Centers. This information is updated every 30 days and transmitted to WR-ALC, where the information is sent to the appropriate program manager (16). The information provided to the PMs is in the form of computer printouts detailing the information on file for a particular type of vehicle. These printouts are produced on mainframe computers and replace the old printouts from the previous month. The Vehicle Master Plan (VMP) mentioned in Chapter 1 provides profiles on over 19,000 vehicles and special purpose sortie-generating equipment. The VMP consists of profiles, or charts, where the PMs track the information on over 19,000 of the 124,000 vehicles in word processing text files. These files can be accessed on individual PCs for budget forecasting by individual PMs (12).

The use of text files facilitates the manipulation of the data on individual machines but it does not allow for mathematical calculations to be performed or for continuous updates where a change in one vehicle type's totals affect the MAJCOM's totals. When preparing a five-year budget proposal, any changes in authorizations/assets on hand for one year also create a ripple effect which should reflect during subsequent years. Text files are incapable of this updating. The Vehicle Program Director at WR-ALC estimates

the updating for each of the 29 types of vehicles within the five "family groups" requires three to four hours for each type. This update is done semi-annually (12). The word processor makes no provisions for mathematical calculations, so all the information input is prone to operator error and stored the same way it was typed in.

Databases and Database Management

Although they use a word processor, the information used by PMS is set up in the form of a database. A database can be defined as a set of master files, organized in a flexible way, so that the files of the database can be easily adapted to new, unforeseen tasks (7:3). Database management systems (DBMS) allow users to add, delete, or edit files within a database. The terms 'data' and 'information' are sometimes used interchangeably. For computer users there is a difference.

Data is something used as a basis for discussion, decision making, calculating, or measuring.
Information is processed data, or meaningful data.
Information tells someone something that he or she did not previously know. (10:15)

In the VMP, information is maintained by the PMS in three parts. Part I, the current status, shows authorizations and assets on hand for a particular vehicle. The difference (overage or shortfall) is also shown. Part II shows depot overhaul and remanufacture status and vehicles meeting replacement criteria and considered for retirement.

Part III integrates the first two parts and shows the differences between projected buys and the total overage/shortage in the present inventory. The same format is followed for all profiles, including a narrative detailing the terms of the procurement contract which will affect new additions to the fleet.

Three types of DBMSs are generally available: hierarchical, network, and relational models (15:24). A hierarchical model is one where a higher-level or "parent" record can have many subordinate or "children" records; each child record, however, may have only one parent. In a network model, two or more databases are connected through one or more data items. For example, several MAJCOMS may own a certain type of vehicle. The MAJCOMS databases could therefore be linked by the common vehicle type. The most common type of structure used on microcomputers is the relational model. The relational model takes as its basis a much simpler structure -- the two dimensional table, rows and columns -- but a much more sophisticated approach defining the relations among the data. Dr. Edgar F. Codd, who first proposed the relational model in 1969 defines the terms. "By relational, we usually mean no more than a program that allows several files to be open at once, and that all open files are somehow related to others by shared categories of information. By non-relational, we mean

programs that allow only one file at a time to be open."

(3:131)

The row-column format ideally suited for DBMS application is exactly the type in use by PMs at WR-ALC. The three parts of each vehicle profile (current status, depot, and integration) are repeated for each of the 29 vehicle types. These "parts" are set up in rows, with the current fiscal year and four subsequent years (out years) worth of data arranged in columns. The PM can project ahead and get a feel for the future status of a particular piece of equipment. A DBMS application would allow PMs to manipulate the data in a number of ways, enabling them to search through literally thousands of vehicles assigned to Air Force units worldwide and produce reports formatted by specific vehicle type or NSN. WR-ALC Vehicle Management Section (ALC/MMVV) presently uses the Zenith Z-248 microcomputers in their daily operations. Eight such units are assigned to the section. The decision of which DBMS software package to use was made keeping several points in mind. First, the end users would have little or no prior knowledge of database applications programs. Second, MMVV presently uses the ENABLETM software package, purchased through the GSA supply system. Any application developed should allow interface with the ENABLE functions. Finally, MMVV has requested an applications software that will run on its Z-248 computers.

Software Selection

With new products and upgraded revisions of old products appearing on the market almost daily, the choice of which software to use is extremely complex as well as important. Because of limited user experience, a system of pop-up menus is desired over the templates used by spreadsheet software packages. One important consideration is size. With five "family groups" making up 29 vehicle types handling over 19,000 vehicles, the DBMS will have to handle these minimum requirements and allow for additional vehicles in the future. The School of Systems and Logistics owns copies of Ashton-Tate dBase III Plus™ DBMS and is authorized to use an official Air Force copy of Nantucket Corporation's Clipper™ compiler (8). dBase III Plus™ has recently been used in other Air Force Institute of Technology thesis projects which have gone on to be used in the operational sectors of the Air Force. One such project involved the automation of the School of Systems and Logistics LSG Graduate Programs Office student records. This project involved a dBase III Plus™ application to allow an inexperienced user to enter, edit, and store data on all LS students from the time they are notified of selection till after graduation, providing data on courses, personal history, and career history (2).

Another graduate student applied dBase III Plus™ to a project automating the Air Force retail-level equipment

management process, an application of microcomputer based information system techniques. This project is currently undergoing testing at several locations throughout the Air Force. It is being monitored by its author at Gunter AFB.

(1:1)

Also vehicle-related was the graduate student computer-based system for tracking Air Force War Reserve Material (WRM) vehicles. This thesis, also in dBase III PlusTM, shows the versatility of the dBase language, incorporating speed and power into a single 5.25 inch floppy disk capable of tracking an entire wings WRM fleet (20).

The use of dBase III PlusTM to create a program can be further enhanced by compiling the finished program using Nantucket Corporation's 'Clipper'TM compiler. Two AFIT faculty members recognized as local sources of expertise in the computer field recommend this compiling process (8). Basically, a dBase III PlusTM program is developed, tested and debugged then compiled, or translated into machine code. The finished product is an executable program which will run directly on several Z-248 system without the user even having to purchase and learn the dBase III PlusTM language. The compiling process will allow the computer to process information at a much faster rate thereby permitting the user immediate access to the database files (17).

During an initial visit to WR-ALC in March, 1989 it was learned that an older version of dBase IIITM is installed on only two of eight Z-248 systems in place. The director expressed great interest in being able to run the finished application as a stand-alone application from any of eight systems in the office. (12)

Scope of the Thesis

This thesis resulted in a microcomputer based DBMS which allows WR-ALC/MMVV to automate the vehicle management system database. The final product includes the compiled software and user's manual.

III. Methodology

The research objectives were accomplished through a series of steps stemming from the exchange of ideas between the Vehicle Program Director at WR-ALC and the DBMS system designer. Addressing the research ultimately led to the actual development of a fully-automated software package capable of tracking and updating all vehicles contained in the Vehicle Master Plan. In addition, the system has the capability of expanding to include hundreds of additional vehicle types. The research process was accomplished in stages as shown below.

Table 1. Research Timetable

<u>Stage</u>	<u>Inclusive Dates</u>
Preliminary Investigation	Oct 88 - Feb 89
Vehicle Master Plan Requirements	Nov 88 - Apr 89
Automating VMP	Feb 89 - May 89
System Design	Apr 89 - Jul 89
Software Development	May 89 - Aug 89
Field Testing	Jun 89 - Aug 89
Implementation	Aug 89

Preliminary Investigation

This stage of the research involved telephone interviews with the Vehicle Systems Program Manager at

WR-ALC and a review of available literature dealing with the USAF vehicle management system. In October 1988, the Vehicle Program Management Office at WR-ALC was developing a rough draft of a management plan to be used by the program managers in developing strategies for vehicle planning, acquisition, and depot repair strategies.

The Air Force vehicle management system is administered by a series of independent committees and advisory groups. Major system forums include the Vehicle Management Advisory Group, the Vehicle Improvement Working Group, Procurement Coordinating Committee, and the Worldwide Materials Handling Conference. Although important issues are addressed in each of these forums, no single, integrated policy or approach has been created for truly systematic vehicle acquisition and management. (5:3)

The Vehicle Master Plan (VMP) was to provide a single source of information on the vehicle fleet, to be used in developing, justifying and prioritizing the vehicle programs required to meet the Air Force wartime and peacetime needs.

Vehicle Master Plan Requirements

The written plan (VMP) brought together a series of numerical and narrative data representative of each particular vehicle type's current status, depot overhaul and new procurement contract information. It was evident that, although this was a first step in providing the PMs with a one-step source of information, the manual input, calculations and data transfer required to keep the VMP current would be an extremely labor intensive procedure

unless automated. The initial guidelines called for a total of 14 categories of vehicle authorizations, depot overhaul projection, and projected buys to be maintained for each vehicle type. Each vehicle type was then 'profiled' or set up or in a grid-like configuration displaying five fiscal years in columnar form.

A "40K aircraft loader" profile includes the following:

40K LOADER		NSN: 3930-00-800-3929CT LIFE EXP: 8				
PART I: CURRENT STATUS		FY89	FY90	FY91	FY92	FY93
A. AUTHORIZATIONS		361	361	361	361	361
B. ASSETS ON HAND		286	286	286	286	286
C. DELTA (+/-)		-75	-75	-75	-75	-75
PART II: DEPOT						
A. MEETS REPLACEMENT CRITERIA		181	154	147	120	107
B. CONSIDER FOR RETIREMENT		0	0	0	0	0
C. PLANNED DEPOT OVERHAUL		27	26	27	0	0
D. PLANNED DEPOT REMANUFACTURE		0	0	0	0	0
E. TOTAL DEPOT (C&D)		27	26	27	0	0
F. REMAINING ASSETS MEETING REPLACEMENT CRITERIA		154	128	120	120	107
PART III: INTEGRATION						
A. AUTHORIZATIONS		361	361	361	361	361
B. OVERAGE / SHORTAGE		-75	-75	-75	-75	-75
C. NEW ASSETS (PROJECTED BUY)		0	0	0	0	0
D. DEPOT REBUILD		27	26	27	0	0
E. DELTA (+/-)		-75	-75	-75	-75	-75
PART IV: NARRATIVE/NOTES						
Current plans are to enhance the 40K situation through the procurement of the 60K Loader. Milestones for the 60K acquisition are as follows:						
Apr 90: Award Development Contract						
Nov 92: Source selection						
Feb 93: Award Production Contract						
Feb 94: First Unit Delivery						
Prod contract = 224 units with option to procure 101 additional units.						

Figure 1. Sample Vehicle Profile

This layout was designed to allow a projection of four years beyond the current fiscal year. The next chapter will explain in detail how this layout was developed and the values contained.

Each of the vehicle profiles depicted only one vehicle type (for example the 25K Tactical Loader). The entire VMP contained 29 vehicles initially. The profiles were copied onto word processing files using the Enable™ Software and a Zenith 248™ microcomputer. This degree of automation provided data storage and retrieval capability, but little else, especially in the way of "number-crunching" or database manipulation. Chapter four will detail the process and formulas used to derive the values in the profiles.

Automating the Vehicle Master Plan

Numerous telephone interviews and an on-site visit by the system designer to WR-ALC in March 89 revealed several important points. The program managers have eight Zenith 248™ microcomputers at their disposal. Of the eight program managers interviewed all had limited word processor experience and only one had any spreadsheet and database experience. The office microcomputers were equipped with both Enable™ and dBase III database software, although no databases were established to track information.

System Design

The application developed as part of the project was set up with the primary goal of facilitating the program managers' task of tracking the many thousands of vehicle contained within the 29 types initially established as sortie-generating assets. It was felt that an automated system capable of running on a Zenith 248TM or any IBM-compatible microcomputer would ease the burden created by the labor-intensive task of tracking the figures and numerical calculations by hand. Prospective users felt that another important feature would be having to change a value such as "projected buys" or "assets considered for retirement" for a given year and see the immediate impact such a change would have on the total inventory for that vehicle type. Users felt that this ability to play electronic "what-if" would enable them to analyze the impact of an inventory reduction or increase and avoid management errors.

The final step in the system design was determining the user's input and output requirements. A complete set of all 29 vehicle profiles was submitted to the DBMS developer with actual values for fiscal years 1989 through 1993. The VMP provided the mathematical formulas used in determining the calculated fields within each column of information. The user requested that the output reports for each vehicle be as similar as possible to the profiles in the VMP.

Software Development

During this stage, Ashton-Tate's dBase III Plus™ (dBase) was chosen. The DBMS developer's access to a personal licensed copy of dBase III Plus™ plus its availability at the School of Systems and Logistics were determining factors. DBase III Plus™'s structured programming language, extensive availability of commercial texts, and access to local dBase programmers for assistance were important contributors to the software selection decision. As previously noted, using a spreadsheet design would require extensive uncontrolled user interface. DBase could be programmed to accept user inputs onto a screen format identical to the report layout in the VMP. DBase code was developed to translate the inputs and outputs into user-interface software capable of providing a variety of on-screen profiles for the 29 preselected vehicle and the added capability of inputting future vehicle types by national stock number (NSN) to the existing database. WR-ALC/MMVV was consulted concerning all requirements and future needs. The system designer was able to set up numerous expansion features into the program, providing the ability to expand well beyond the 29 types of vehicles initially required. The user may also delete or edit any vehicles from the main database. As development progressed, sample 'screen-dumps' and printed reports were sent to WR-MMVV for coordination. One other feature was the inclusion

of a master file update routine where a central file (Program Director's) can be updated with current information from disks maintained by the individual PMs. This particular feature was added at the request of the user after development had begun. The system was designed to operate on either a hard drive data storage unit or off a single 360 kilobyte 5.25 inch floppy disk drive. If installed on a hard drive, data retrieval time is reduced and the file size (number of records or vehicles) is increased based on the size of the hard drive.

Prototype Testing.

A team of local student volunteers at the School of Systems and Logistics provided the system designer with inputs concerning the ease of use and difficulty of the different versions of the program as it evolved. Error-trapping loops and subroutines to speed up the program produced a final revision which was personally delivered by the developer to WR-ALC for on-site installation and testing at the Vehicle Program Management Office. A 16 page User's Manual and accompanying Tutorial (Appendix C) were included with the software.

Even before some of the utilities and printed report outputs were added, the main database was loaded by the system designer using actual data taken from the final copy of the "hand-scribed" Vehicle Master Plan distributed by WR-

ALC/MMVV on 7 June 89. The program immediately located 55 mathematical errors contained in the figures shown in the profiles for the 29 different vehicle types. The software developed performed the necessary calculations in a matter of seconds per vehicle per year. This contrasted well with the former error-prone method of manually calculating the vehicle profile entries then transcribing these to a word processor file. Also found in the initial version of the manual VMP were two vehicles with incorrect NSNs. The developer located the Vehicle Management Index File and corrected all remaining vehicles (6:1-103). The software developed stores all NSNs in the following format:

9999-99-999-9999AA where '9' is a numeric value and
'A' is a letter character only.

The software places the dashes for ease of entry and readability, and also converts all user letter characters to upper case.

IV. Findings and Discussion

In chapter I of this study, five research questions were asked to determine if the Program Managers (PMs) could benefit from an automated system which would maintain vehicle status information for sortie-generating vehicles. After each of the questions was answered, the USAF Vehicle Master Plan was addressed using a micro based DBMS. This chapter details the findings of the research and explains the methods used by PMs to manually track vehicle data. It then discusses the microcomputer software package developed during this study and outlines the automation process and training/software requirements for the user.

Research Questions

Research Question One. What procedures at the program manager level are excessively labor intensive and could therefore be automated, increasing productivity and improving mathematical accuracy?

The PMs at WR-ALC track Air Force general purpose and special purpose vehicles. The Material Management branch, specifically WR-ALC/MMVV, employs the PMs who work closely with the contracting division and REMS Item Managers (IMs) to determine the availability of new assets. The contract information is maintained on the AFLC 318, Item Procurement History Record. This form is maintained by the IMs at WR-ALC/MMVD. Whereas the PMs are responsible for family groups

of vehicles and their distribution throughout the Air Force, IMs are inventory specialists responsible for specific types of equipment. Vehicles are filed by National Stock Number (NSN) and the procurement history is tracked for each NSN for the duration of the contract. The production contract number, contract quantity, contractor, award date, first delivery date and first delivery quantity are tracked on this form. As vehicles become available from the manufacturer, the contract information is updated. Also if the original contract is changed or appended, this is also annotated. The form is a multi-year history record, which provides the contract data on all vehicles (12). When a vehicle has been in service for a period of time, the manufacturer specifications sometimes call for the remanufacture or overhaul of the vehicle. Information on planned depot action and the final approval for overhauling or new purchase comes from the Production Management Branch (WR-ALC/MMPM).

The contract depot overhaul program works well, with some vehicles being overhauled at 30-40 percent of their acquisition cost, and some at close to 75 percent of acquisition cost. It is rare if vehicles are overhauled when the overhaul cost exceeds 75 percent of acquisition. If it does occur, a complete justification is required. (21:2)

This decision is based on the most cost-effective method to the Air Force, keeping in mind the actual overhaul costs, transportation costs to and from the overhaul

location (those costs are paid by the user) and the estimated extended life expectancy of the overhauled vehicle. (11)

Actual authorizations are found in the Table of Allowances and listed in the Format R-53 report which also provides a breakdown by MAJCOM of assets on hand and quantities authorized. (23)

Vehicle Profiles. The USAF Vehicle Master Plan seeks to combine various categories of information obtained from assorted Materiel Management branches at WR-ALC under a single format. A vehicle profile or report is set up by NSN and arranged into a five year row-column format (Figure 1). The columns are arranged by fiscal year (FY) providing a five year span beginning with the current year. The rows are set up into four parts:

- I. Current Status- authorizations and assets on hand.
- II. Depot- planned overhauls and remanufactures.
- III. Integration- overage/shortage and projected buys.
- IV. Narratives/Notes- contract delivery information.

The PMs obtain seven numerical categories from different sources and calculate five additional amounts per year for each vehicle by year. The twelve categories set up for each vehicle must be examined before answering research question one.

Part I "Current Status: (IA) Authorizations" is obtained from the Table of Allowances. This amount changes based on mission needs and DOD funding.

40K LOADER	NSN: 3930-00-800-3929CT			LIFE EXP: 8	
PART I: CURRENT STATUS	FY89	FY90	FY91	FY92	FY93
A. AUTHORIZATIONS	361				
B. ASSETS ON HAND	286				
C. DELTA (+/-)	-75	0			
				Highlighted Blocks accept user inputs.	
PART II: DEPOT					
A. MEETS REPLACEMENT CRITERIA	181				
B. CONSIDER FOR RETIREMENT	0	0			
C. PLANNED DEPOT OVERHAUL	27				
D. PLANNED DEPOT REMANUFACTURE	0				
E. TOTAL DEPOT (C&D)	27	0			
F. REMAINING ASSETS MEETING REPLACEMENT CRITERIA	154	0			
				Remaining Blocks in each column are copied	
PART III: INTEGRATION					
A. AUTHORIZATIONS	361	0			
B. OVERAGE / SHORTAGE	-75				
C. NEW ASSETS (PROJECTED BUY)	0				
D. DEPOT REBUILD	27	0			
E. DELTA (+/-)	-75	0			
PART IV: NARRATIVE/NOTES					

Figure 2. Vehicle Profile User Entries

"(IB) Assets on hand" - As reported by the MAJCOMS, this quantity is available in the Format R-53 Report- USAF Worldwide Vehicle Requirements Summary.

"(IC) Delta" is calculated by subtracting Assets on hand from Authorizations (IB - IA).

Part II "Depot: (IIA) Meets Replacement Criteria" is based on vehicle mileage, age or hours of operation. It is

based upon the date the asset was initially placed into service.

"(IIB) Consider for Retirement" is the same as IC. If authorizations exceed assets on hand, then no vehicles are considered for retirement, so $IIB = 0$.

"(IIC) Planned Depot Overhaul" and "(IID) Planned Depot Remanufacture" are based on user's forecasted requirements. Both amounts are obtained from the WR-ALC MMPM Production Management Branch (11).

"(IIE) Total Depot" is the sum of $IIC + IID$.

"(IIF) Remaining Assets Meeting Replacement Criteria" is the number of units meeting replacement criteria minus the sum of the units considered for retirement plus total depot $IIA - (IIB + IIE)$. If this yields a negative value, 0 is used in the analysis. In Figure 2: $[181 - (0 + 27) = 154]$.

Part III "Integration: (IIIA) Authorizations" is the same as IA. "(IIIB Overage/Shortage" is the same as IIIE of the previous year.

"(IIIC) New Assets" is the number of vehicles contracted for, by FY of contract award and planned future procurements, by FY in which procurement action is planned. New assets are not reflected in (IB) "Assets on hand" until the FY they are scheduled to be delivered.

"(IIID) Depot Rebuild" is the same as IIE.

The value "(IIIE) Delta" is not to be confused with IC "Delta." New assets are included for the FY they are

contracted rather than the FY they are delivered. This value therefore adds IIIB and IIIC. Vehicles to be considered for retirement (IIB) are not factored into this figure.

Part IV, the "Narratives/Notes" section includes narratives of the current and future procurements. Delivery dates and quantities are listed (if known), as well as recommendations for changes to the current procurement, depot repair or retirement strategy. (5)

As noted previously, the values needed for the vehicle profiles are obtained from several different sources (Table of Allowances, R-53 Report, Production Management) and combined by the PMs. Although the data gathering steps will still have to be carried out manually, it was determined that the data storage, report profile formatting and mathematical calculations (IC, IIB, IIE, IIF and IIIE) could be automated. Several of the calculated amounts are later used to derive figures in the later sections. For example, an error in the difference between authorizations versus assets on hand would affect sections IC, IIB and IIF. The point here is that manually calculating and transferring the values onto hand-scribed forms provide limited mathematical accuracy and no uniformity since each PM is tasked to complete a particular family group of vehicles. The report formatting, mathematical calculations and data storage could

all be automated to eliminate and reduce the amount of time spent by PMs in preparing a vehicle profile.

Research Question Two. Which automation tool would accomplish this automation at a reasonable cost to the Air Force?

The procedures outlined in answering the first research question are carried out solely at WR-ALC/MMVV, the office of Vehicle Program Management. The automation tool implemented would not require an on-line tie-in to a mainframe computer. All the necessary information is available within the Materiel Management Division, therefore the task would require the PMs to input the required data manually. Telephone hookups to other systems are likewise not required, although a LAN office networking system might be desirable for the PCs. The vehicle program management office is assigned eight Zenith Z-248TM microcomputers. Each unit is equipped with a 20 megabyte hard drive storage device and a 5.25 inch 360 kilobyte floppy drive. Two units have color monitors; the remaining six have monochrome monitors. In the interest of cost and time, it was decided that the automation tool selected would have to operate as a stand-alone application capable of operating independently on each computer.

Having identified existing hardware, the question of software was the next most important decision. The PMs interviewed in March 1989 were all familiar with the EnableTM word processing software. Only one of the eight

PMs had any experience with database applications and spreadsheets. The EnableTM integrated software package contains word processing, spreadsheet, database and a telecommunications function. The cost of the software was negligible since it was already owned by the ALC. In the case of the EnableTM package, the development of an automation tool would require the user to learn the program language in order to run an application.

An electronic spreadsheet package would be ideal for the row-column layout that the vehicle profiles will require. However, information on a spreadsheet is stored in 'cells' or locations on the spreadsheet and shifted by the user or referenced by other cells. Once placed in a certain location or cell address, a particular vehicle type would always be referenced at that particular location. As the list of vehicles grows in the future, each new item is assigned another section of the spreadsheet. This method relies on the user knowing exactly where each vehicle is located and gets subsequently slower as the spreadsheet gets larger.

Data integrity, which is "the process of ensuring the validity of the data being entered (14:15-16)," was a prime concern. In the case of NSNs, numbers and letters may be combined as in the case of the 40K in Figure 2 (3930-00-800-3929CT). The system must reject incorrect user entries,

properly update computed fields, and store information separated by fiscal year.

The automation tool well suited for application to the Vehicle Master Plan is a relational database management system. This system would allow the users to input vehicle information, perform all necessary calculations and produce printed reports for accessing information from a hard copy or when transmitting printed reports to MAJCOM vehicle managers.

One cost-effective solution for the Air Force seemed to be the development of this custom application using Ashton-Tate's dBaseIII PlusTM database management system. The School of System and Logistics owns copies of dBaseIII PlusTM as well as Nantucket Corporation's ClipperTM which combined have the capability of producing a compiled stand-alone application. The compiling process is desirable since it translates the program code into machine code which offers two distinct advantages. First, machine code is accessed much faster by the computer, thereby increasing the speed of the program. Second, the compiled executable file produced by ClipperTM is royalty-free and can be legally copied and distributed to all program managers without the complications of copyright infringements associated with virtually all software packages which require a licensed copy of the software for each machine using the application. Setting up eight machines each with \$800 worth of software

can quickly dampen all efforts to automate during times of constrained budgets.

Research Question Three. Would automation at the microcomputer level have a definite advantage over the present system?

The vehicle profiles are updated manually as described earlier in answering question one. Seven manual entries and five calculated entries are required per vehicle type per year. The present system is automated only for the storage of data. The 29 sortie-generating vehicles in the original Vehicle Master Plan are profiled for FY 89 through FY 93 in a word processing text file. This system has no arithmetic capability. Text is limited to on screen reports which are accessed by scrolling past dozens of screens of information before obtaining the desired vehicle. This system is also prone to arithmetic error since calculations are carried out manually then transferred onto the typed format. No control is maintained over numerical fields other than just entering the data by way of a keyboard. There is no control over 'data integrity', that is, ensuring the proper number or character is used in its appropriate field.

The use of a relational database management system provides mathematical accuracy and allows users to manipulate data for output to the screen or printer. A very powerful feature is the ability to expand beyond FY 93 and handle a full 10 year range of numerical data. This would allow expansion in years to come by allowing the first FY in

the five-year outlook to change based on user input, though the system could roll forward with each FY. The four subsequent years would change accordingly. Another advantage to this method is that information from past years (starting with FY 89) would not be lost. Instead it would be retained in the database file and accessed based on the year requested by the user. None of these automation features are presently available.

Research Question Four. Would additional equipment and training be required by the end-user?

The development of a stand-alone program would not require procurement of any additional software or hardware by the Air Force. The program users would be provided with a comprehensive user's manual and all requests for information would come through on-screen custom menus. One advantage of a custom application is that information and data exchange between the user and the program is very specialized. A custom application is developed specifically for the end user so the terminology, information requested and reports output by the program are not totally foreign. The PMs have very limited experience using all but word processing software, so all on-screen requests for information will have to be clearly understood. No specialized training would be required for the program. A written tutorial to accompany the user's manual would be a great benefit to the inexperienced users. This tutorial

would be arranged in a "task analysis" setup where the users would interact with each routine in the program using a common example.

Research Question Five. Can applications programs be developed to automate labor-intensive procedures and provide vehicle program managers with a fast, accurate method of adding, deleting, modifying and extracting data required by MAJCOMS for planning acquisition and/or repair strategies throughout the Air Force?

The first part of the question was looked at in questions one and two. Ashton-Tate's dBaseIII PlusTM has been used successfully in developing applications presently used at the Air Force Institute of Technology, the Air Force Academy, the Logistics Management Center (LMC) and USAFE to name a few (2). A relational database can be used for data storage, arithmetic manipulation and data retrieval. Vehicles can easily be added to the database or deleted if the program manager gets to discontinue tracking that particular vehicle. Data can be quickly extracted either on-screen or onto a printed report. An applications program allows the user to enter the values required for a vehicle profile without worrying about proper alignment or decimal points. On printed reports, values can be arranged in a specific format, maintaining uniformity throughout the report, regardless of family group or vehicle type.

The remainder of this chapter outlines the automated version of the Vehicle Master Plan. The formulas for all calculated cells were derived from the Main Plan. Close

contact was maintained with the Vehicle Program Management Office and discrepancies between the final 31 May 89 revision of the manual VMP and earlier versions were corrected.

Automated Vehicle Master Plan

The computer program accompanying this research, named the Automated Vehicle Master Plan (AVMP), incorporates all the aspects of the formal USAF Vehicle Master Plan plus many additional benefits stemming from application of a DBMS. The final program runs as a 'stand-alone' application off any IBM-compatible microcomputer either from the system's hard-drive or from a 5.25 inch 360 kilobyte floppy disk. A series of on-screen menus guide the user through the steps necessary to add, edit and delete vehicle information, as well as producing on-screen and printed reports of vehicle 'profiles' or five-year outlooks. A top-down structuring technique was used throughout the program. From the main menu, the user makes a selection which moves the program into a secondary menu. From here additional subroutines are called up to perform different commands. All inputs accepted from the user are verified before making permanent changes to the main database file. Fields requiring numbers or letters will only accept the appropriate character. This insures data integrity is maintained throughout all the interacting modules. Completion of a subroutine returns the

user to the previous menu. The program provides a full five year outlook based on the vehicle selected for a particular 'start year.' It also performs all numerical calculations and carryovers described earlier in this chapter. Figure 3 depicts the top-down structuring applied to the system modules. A detailed program code is available in Appendix A.

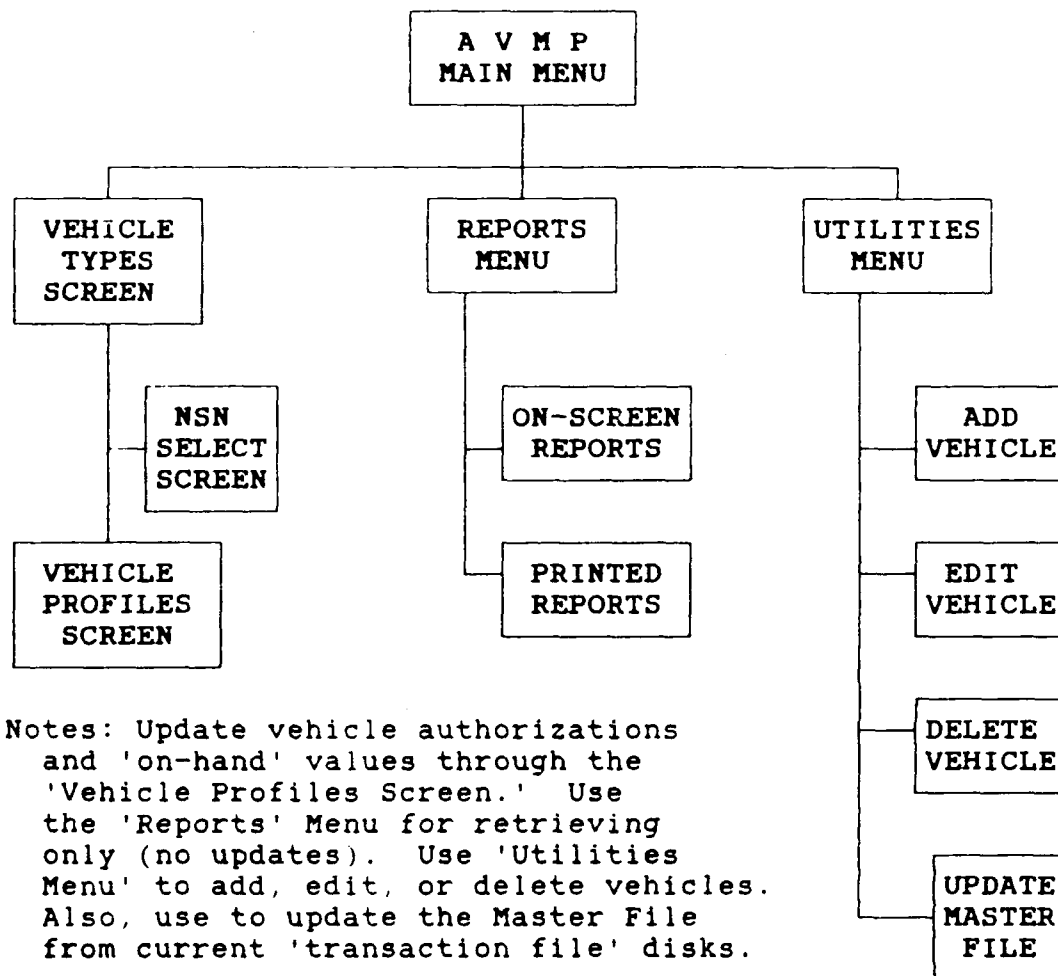


Figure 3. AVMP Program Modules

Main Menu. After initializing VMP, the four item Main Menu appears (Figure 4). The user may select [1], [2], [3], or [Q] followed by the 'enter' or 'return' key. Selection

A V M P	
* M A I N M E N U *	
1. VEHICLE PROFILES	
2. REPORTS	
3. UTILITIES	
[Q]uit AVMP	
_____ select	_____

Figure 4. AVMP Main Menu

[1] transfers control to the Vehicle Profiles, [2] allows viewing or printing reports, [3] allows the user to perform utility functions such as adding, editing, or deleting new records, to update a main database file from secondary files or to backup existing files. From the Main Menu, [Q] exits the program and returns control to the DOS prompt. Throughout all other menus, choice [Q] returns the program to the Main Menu. An incorrect selection will cause a friendly reminder to appear.

The caret (^) symbol represents the 'Ctrl' key. Therefore, ^S means press the Ctrl and S keys simultaneously. Any systems errors (invalid disks, printer

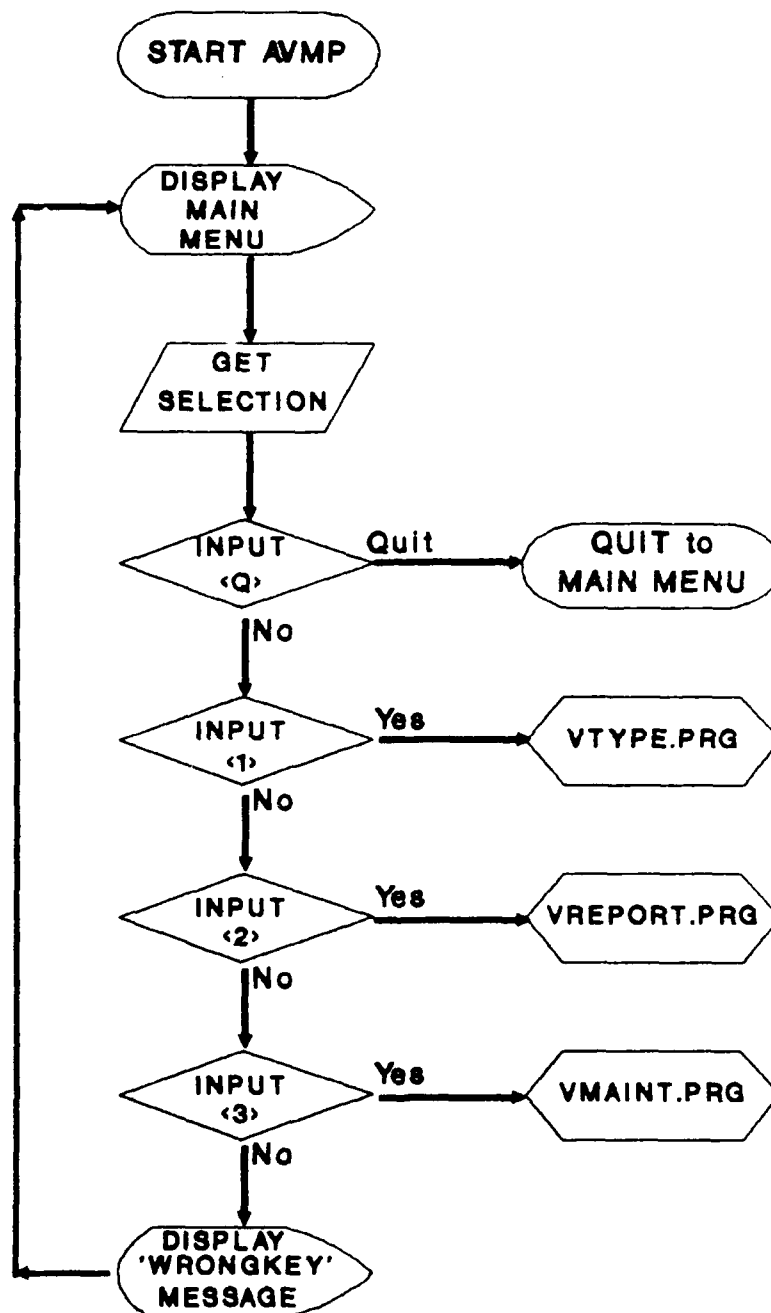


Figure 5. AVMP Main Menu Routine Flowchart

off-line, etc.) will automatically return the program to the Main Menu. Also throughout the program, all numeric or alphabetic responses must be confirmed by pressing the 'enter' or 'return' key. The [PgUp], [PgDn], or [ESC] keys or a combination key stroke such as ^PgUp do not require this confirmation. All letters entered by the user in response to on-screen commands are converted to uppercase for uniformity.

Incorrect responses will cause a warning screen to be displayed on the bottom three rows of the screen. The user returns to the original screen by pressing any key. Figure 5 shows a flowchart of AVMP's Main Menu Choices.

Vehicle Types. Selection [1], 'Vehicle Profiles' causes the 'Vehicle Types' screen to appear (Figure 6). This screen displays a list of the 30 vehicle types in the original USAF Vehicle Master Plan. The user may select one of these vehicles by entering the vehicle's pre-assigned number (01-30) at the cursor. To allow future expansion of the database, the user is also given the option to manually enter a vehicle's National Stock Number.

VEHICLE TYPES

SELECT A VEHICLE TYPE FROM THE LIST BELOW

- | | |
|---------------------------------|--------------------------------|
| 01 STRADDLE CRANE 50K ATR | 16 REFUELING VEHICLES R-5/9/11 |
| 02 STRADDLE CRANE 75K (Non-ATR) | 17 TRK FIRE CRS P-19 |
| 03 25K STANDARD LOADER | 18 WATER TRK P-18 |
| 04 10K STANDARD FORKLIFT | 19 TRK FFGT CRS P-10 |
| 05 WBEL (WIDE BODY LOADER) | 20 TRK FFGT PMR P-22 (P-12) |
| 06 10K AT FORKLIFT | 21 TRK FFGT PMR P-24 (P-8) |
| 07 13K AT FORKLIFT | 22 CRASH TRUCK P-15 |
| 08 25K TACTICAL LOADER | 23 CRASH TRUCK P-23 (P-2) |
| 09 40 FT ROLLERIZED TRAILER | 24 CRASH TRUCK P-20 (P-13) |
| 10 40K LOADER | 25 TRK FFGT HIGH-REACH(P-21) |
| 11 60K LOADER (FUTURE USE) | 26 TRK FIRE MINI PUMPER |
| 12 TRAC ACFT TWG MB2 | 27 SNO PL TRK 54000GVW |
| 13 TRAC ACFT TWG MB4 | 28 SNOW REMOVAL UNIT 3000 TPH |
| 14 TRAC ACFT TWG U-30 | 29 SWEEPER ROTARY BLOWER |
| 15 TRAC TOW SUPPORT EQUIP | 30 TRK SNOW RHL MLTPU 2000 TPH |

SELECT [Q]uit to MAIN MENU, 01-30 for 5-YEAR OUTLOOK,
or [M] FOR MANUAL ENTRY (National Stock Number):

Figure 6. Vehicle Types Screen

Manual Entry. Entering [M] from the "Vehicle Types" screen calls up the NSN selection screen (Figure 7).

ENTER STOCK NUMBER: - - - -

Example: 3930-00-800-3929CT

Please Include ALL Numbers & Letters

Figure 7. NSN Selection Screen

The user must enter all numbers and letters (if applicable) in the block provided. Only numbers are accepted for input into the first 13 positions. The last two positions accept letters only. Dashes are automatically inserted by the program. The program carries out a detailed search of the database looking for the NSN input by the user. If only one number or letter is mistyped or if the NSN is not found in the database, the screen changes and asks the user to try again (Figure 8). If [Y] is entered, the program loops back to the NSN manual entry screen. If [N] is entered, the program returns to the Vehicle Types screen.

<p>Stock Number 1234-56-789-0123XY Not Found.</p> <p>Try Again? (Y/N) <input type="checkbox"/></p> <p>[Y]=Retry * [N]=Return to Previous Menu</p>

Figure 8. NSN Retry Screen

This same manual NSN entry technique is used in the Reports Menu and in the Utilities Menu.

Five Year Outlook. Once a vehicle type is selected from the Vehicle Types screen or a positive match is identified from the manual NSN entry, the program displays the 'Five-Year Outlook' Screen (Figure 9). The screen displays the vehicle selected from the previous menu and asks the user to input the first year of interest. This

entry will be the basis for the Five-Year Profile screen. The allowable range of 89 through 94 permits profiling vehicles for a total of 10 years- from FY 89 through FY 98 (94 plus four out-years).

<p>VEHICLE MASTER PLAN 5-YEAR OUTLOOK</p> <p>ITEM: 40K Loader</p> <p>ENTER FIRST YEAR (89 thru 94) or 0 to QUIT: <input type="text"/></p>

Figure 9. Five-Year Outlook Screen

Since the program actually stores values for each vehicle for the entire 10-year period, memory is allocated within the program for each value. To allow sufficient space on a disk for future expansion of records, the Vehicle Program Management Office specifically requested this 10-year range. The dBaseIII Plus™ database format allows for this range to be increased in the future with only a slight change in the program code. Once the user enters the FY desired, the program goes into a 12-variable internal memory loading process extracting values from the full 10-year database. While the program searches, a 12-variable counter appears on the screen (Figure 10) to let the user know how long before the variables are loaded. Depending on the configuration and internal clock speed of the microprocessor, this loading process takes approximately

10 to 12 seconds. Figure 11 shows a flowchart of AVMP's Vehicle Type and First Year Selection Routine.

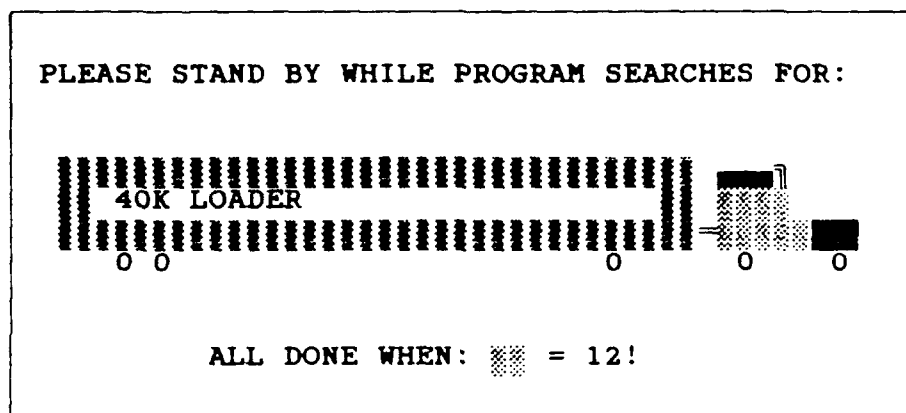


Figure 10. Internal Counter Screen

40K LOADER	NSN: 3930-00-800-3929CT					LIFE EXP: 8
PART I: CURRENT STATUS	FY89	FY90	FY91	FY92	FY93	
A. AUTHORIZATIONS	361	361	361	361	361	
B. ASSETS ON HAND	286	286	286	286	286	
C. DELTA (+/-)	-75	-75	-75	-75	-75	
PART II: DEPOT						
A. MEETS REPLACEMENT CRITERIA	181	154	147	120	107	
B. CONSIDER FOR RETIREMENT	0	0	0	0	0	
C. PLANNED DEPOT OVERHAUL	27	26	27	0	0	
D. PLANNED DEPOT REMANUFACTURE	0	0	0	0	0	
E. TOTAL DEPOT (C&D)	27	26	27	0	0	
F. REMAINING ASSETS MEETING REPLACEMENT CRITERIA	154	128	120	120	107	
PART III: INTEGRATION						
A. AUTHORIZATIONS	361	361	361	361	361	
B. OVERAGE / SHORTAGE	-75	-75	-75	-75	-75	
C. NEW ASSETS (PROJECTED BUY)	0	0	0	0	0	
D. DEPOT REBUILD	27	26	27	0	0	
E. DELTA (+/-)	-75	-75	-75	-75	-75	
PgUp=Prev Menu [P]rint [U]pdate FY89-93 [Q]uit PgDn=Narratives						
Select PgUp or PgDn keys else P, U, or Q followed by <-: [pattern]						

Figure 12. Profiles Screen

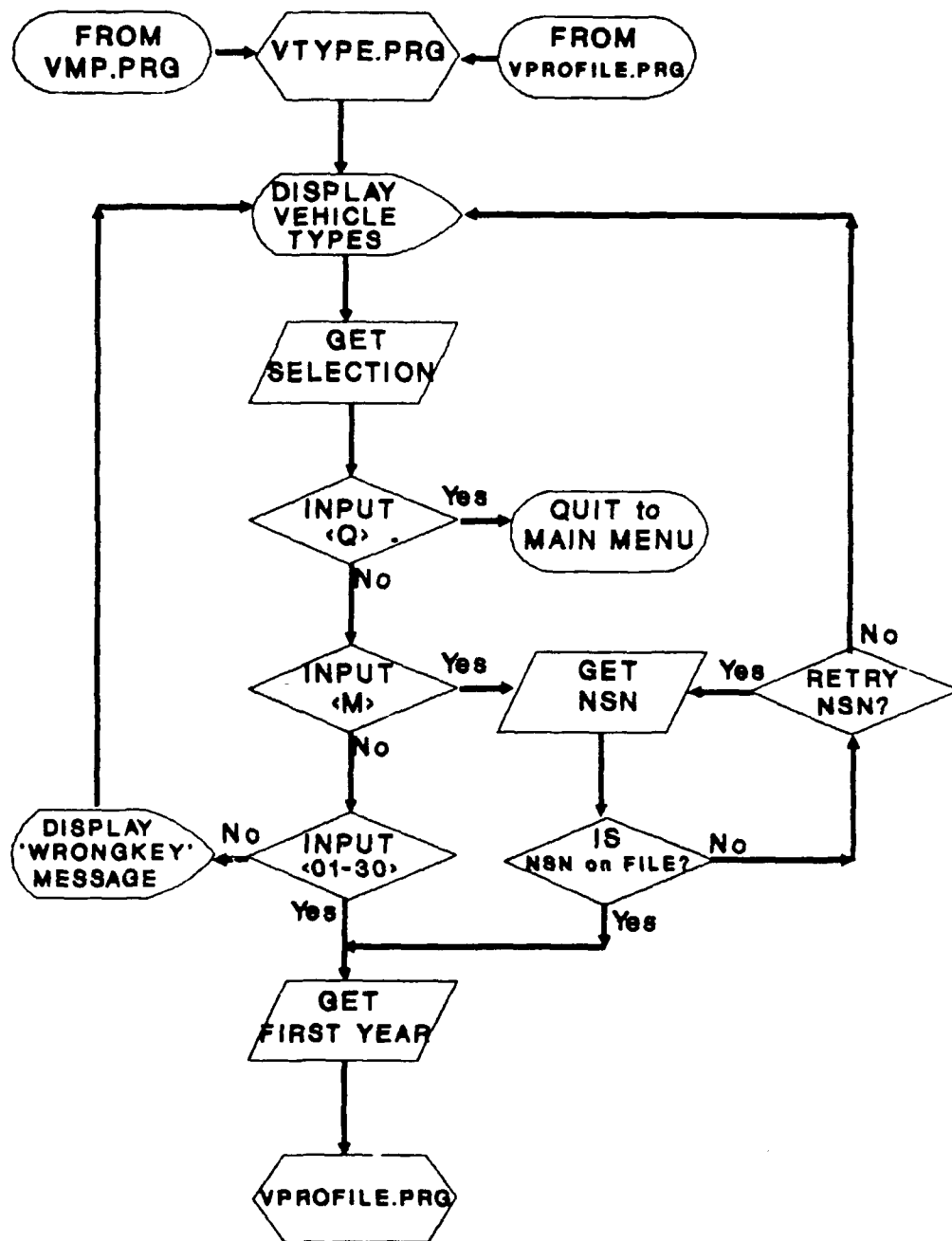


Figure 11. AVMP Vehicle Type Routine Flowchart

Vehicle Profiles Screen. At the heart of the VMP is the Profiles Screen (Figure 12) which appears after the memory variables are loaded from the main database. Across the top row of the screen appears the Vehicle Type Name, NSN and Life Expectancy. Across the next row is a display of the five FYs beginning with the first year entered by the user from the previous entry screen. Along the left third of the screen is a listing of the three parts or sections to be profiled. The listing is broken down earlier in this chapter (see Research Question One).

Across the bottom two rows of the screen are the five commands available to the user. Pressing the [PgUp] key returns the user to the Vehicle Types menu.

Narratives/Notes. The [PgDn] key will allow the user to view or update the contract 'Narratives/Notes' discussed earlier (see Research Question One) in this chapter. After pressing the [PgDn] key, the Narratives Retrieval Screen appears (Figure 13).

The following procedure will allow you to view or edit
the contract narratives for the selected vehicle.

* Please notice the different keystroke combinations! *

To VIEW or EDIT Narratives, Press Ctrl + PgDn

To SAVE Narratives (after editing), Press Ctrl + PgUp

To RETURN To PREVIOUS SCREEN, press PgUp

Figure 13. Narratives Retrieval Screen

This intermediate step was required because dBaseIII Plus requires a special keystroke combination when editing memo fields, a type of field containing text assigned uniquely to a vehicle.

From the retrieval screen, to view or edit the Narratives for the vehicle being profiled, the user must press ^PgDn or ^Home. This will cause the screen to change over to the dBaseIII Plus text editor. Information entered by the user will be handled similar to a word processor format. Lines will automatically be 'wrapped around' to the next line leaving 68 columns available for text. From this screen, the user has access to a number of word-processor

functions. To view the dBase text editor Help Menu, the user presses the [F1] key. This will cause the actual text to appear starting at row 8 leaving the top rows open to display the available options. The caret '^' symbol here also means "hold down the [Ctrl] key while typing the next letter(s)." To toggle the Help Menu on and off, the user presses the [F1] key.

After updating the Narratives, the user returns to the Narratives Retrieval Screen in one of two ways. The ^PgUp or ^W keystrokes will save the narratives including any changes. To return to the Narratives Retrieval Screen without saving any changes, the user presses the [ESC] key. Now, to return to the Profiles Screen, the user selects the [PgUp] key once again. This procedure is complicated by the extra keystrokes required by the dBase language. If the user is not making any changes but simply wishes to view or print out the information already contained in the database, the Reports Menu (selection [2] from the Main Menu) is much quicker.

Updating Values. From the Profiles Screen the user may also update the numbers contained in the five-year chart. By entering [U], the bottom two rows of selections are cleared off the screen and the user is asked, "Which year do you wish to update?" The user may select any one of the five years corresponding to the five-year outlook on the

screen. Since this option builds upon the previous selection in the 'top-down' structuring employed throughout the program, if the user wishes to update a year other than the five shown, the first year of the five-year outlook must be changed. This is done from the Five-Year Outlook Screen.

Once the user enters the year to update, the cursor will move to the Authorizations block for the particular year. The user may now enter a new value or if the value shown is correct, just press the [Enter] or [Return] keys to retain that value. The update process requires the user to input seven values in the column of the year selected. The remaining seven values are either calculated amounts or repeated from a value previously entered in a previous block for that same year. For example, the user enters the value for Part IA 'Authorizations.' This same amount will automatically be transferred to Part IIIA eliminating the need to re-enter the number. The highlighted blocks in Figure 14 represent the user inputs.

40K LOADER		NSN: 3930-00-800-3929CT		LIFE EXP: 8	
PART I: CURRENT STATUS		FY89	FY90	FY91	FY92 FY93
A. AUTHORIZATIONS	361				
B. ASSETS ON HAND	286				
C. DELTA (+/-)	-75	0			
PART II: DEPOT					
A. MEETS REPLACEMENT CRITERIA	181				
B. CONSIDER FOR RETIREMENT	0	0			
C. PLANNED DEPOT OVERHAUL	27				
D. PLANNED DEPOT REMANUFACTURE	0				
E. TOTAL DEPOT (C&D)	27	0			
F. REMAINING ASSETS MEETING REPLACEMENT CRITERIA	154	0			
PART III: INTEGRATION					
A. AUTHORIZATIONS	361	0			
B. OVERAGE / SHORTAGE	-75				
C. NEW ASSETS (PROJECTED BUY)	0				
D. DEPOT REBUILD	27	0			
E. DELTA (+/-)	-75	0			

Highlighted Blocks
accept user inputs.
Remaining Blocks
in each column
are calculated or
transposed fields

WHICH YEAR DO YOU WISH TO UPDATE?
(CHOICES: 89, 90, 91, 92, or 93)

Figure 14. Profiles Screen (User vs. Calculated Fields)

Within the highlighted blocks, the user is free to use the arrow keys and make all necessary changes. Once [Enter] is pressed, the cursor jumps to the next set of highlighted blocks. If an error was made in a block already entered, the user will have to update that particular year again and re-enter the blocks from Part 1A. The reason for this method of updating is the calculations in Part II and Part III are based upon values entered in Part I. If the user is allowed to re-enter a value in Part I after the program has

performed the calculations for the remaining two parts, the same field might end up containing two different values.

One other tip when entering new data over existing data is that the old information remains on the screen but will be overwritten when a new value is confirmed by the [Enter] key. This could cause some confusion since the user might see a trailing zero, for example, and think that his new value will contain that zero. The user realizes after pressing [Enter] that the value is wrong! Again, this is part of the way dBase retains values in cells which users will have to keep in mind.

In answering Research Question One, the 'Overage/Shortage' amount in Part IIIB was taken from Part IIIE 'Integration Delta' from the previous FY. In the automated version, the user inputs the 'Overage/Shortage' amount rather than have the program update this automatically. This was programmed intentionally after verification by the Vehicle Management Office at WR-ALC (19). The main reason is that if a PM updates a year then sees a change in the previous year's values and shifts over to the earlier year, the initial year's values may then be in error. By having the 'Overage/Shortage' value be a user entry, the user can simply look one column over to the previous year and copy the value from Part IIIE.

The updating allowed from the Profiles Screen is restricted to the values for Parts I, II, and III for the

five years shown of the narratives as described earlier. If the user wishes to change the Vehicle Description, the NSN, or the Life Expectancy, this must be done from the 'Utilities' Menu (Selection [3] from the Main Menu).

Once the updating process is complete, the user may elect to print out the report by entering [P] at the Profiles Screen selection block. The report will be an individual report, double spaced, including the Narratives and Notes in part IV, for the vehicle shown on the screen. This option is identical to selection [7] from the Reports Menu. A typical report is shown in Figure 11. Once all changes to a particular vehicle have been posted, the user may press the [PgUp] key to return to the Vehicle Types Menu or enter [Q] to quit back to the Main Menu. Figure 15 shows a flowchart of AVMP's Vehicle Profiles Routine.

Reports Menu

R E P O R T S M E N U	
1.	463L FAMILY
2.	A/C TOWING FAMILY
3.	REFUELING FAMILY
4.	CRASH / FIRE FAMILY
5.	SNOW REMOVAL FAMILY
6.	FULL REPORT (ALL █ VEH's)
7.	INDIVIDUAL VEHICLE TYPE

8.	QUICK LIST (Types & NSNs)
[Q]uit To MAIN MENU	

SELECT █	

Figure 16. Reports Menu

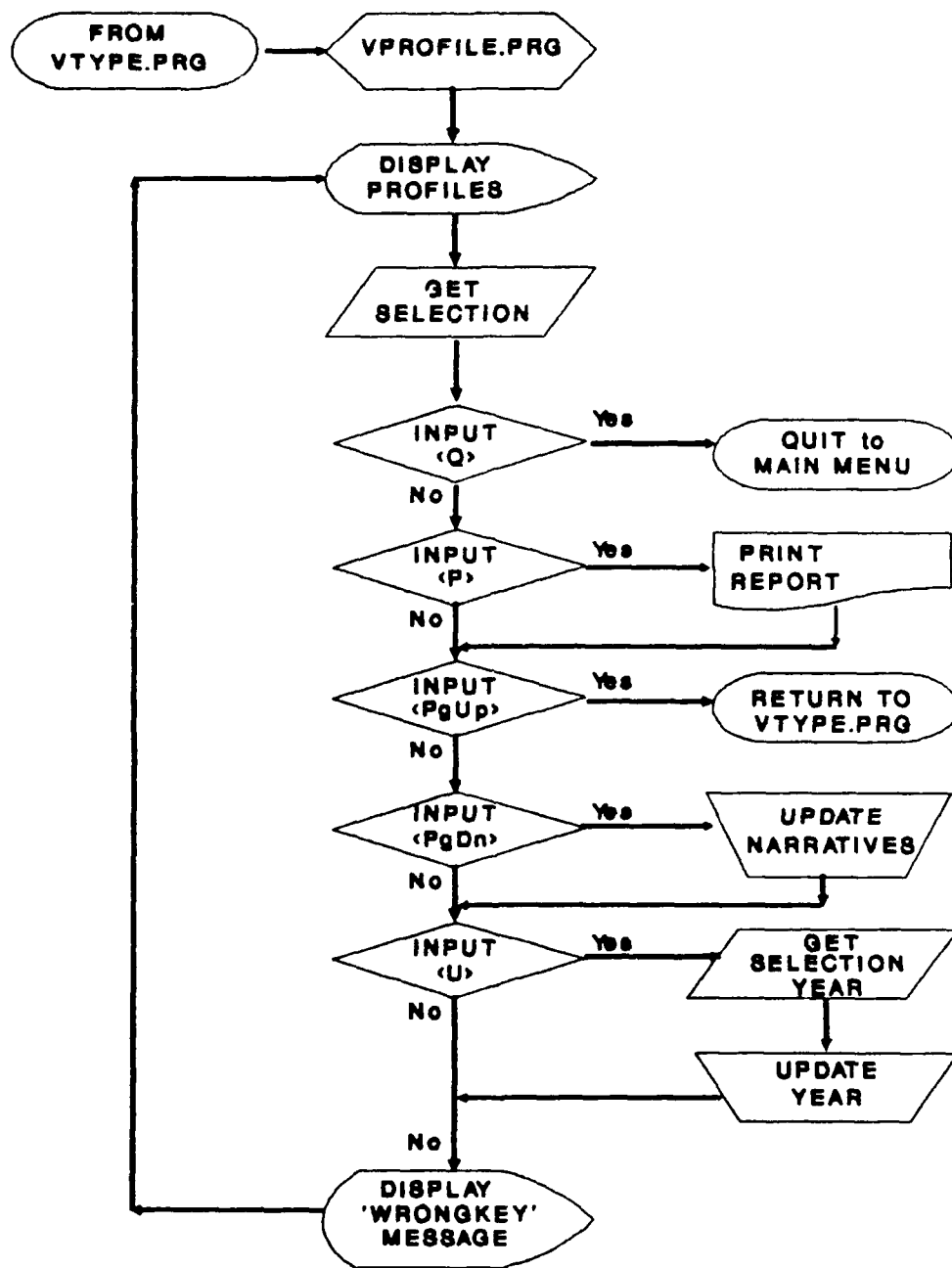


Figure 15. AVMP Vehicle Profiles Routine Flowchart

From the Main Menu, selection [2] branches the program to the Reports Menu (Figure 16). Selections from the Reports Menu will enable the user to view reports on screen or print out reports based on information already contained in the main database. Any updating of these values must be done from the Vehicle Profiles Menu or the Utilities Menu.

Family Groups. The Vehicle Profile reports will be formatted as shown in Figure 17. Since vehicle are separated into one of five family groups, selections [1] through [5] will produce all reports within the requested family group only. Within the group, vehicles will be 'indexed' or arranged in ascending numerical order by NSN. Selection [6] will produce a 'grand total' report of all vehicles contained in the database, indexed by NSN.

Individual Vehicle Type. Selection [7] is for individual vehicle use in case the user wishes to look up a single vehicle. After entering [7], the user is asked to enter the NSN using the familiar 'NSN Entry Screen' also used in the Vehicle Types Menu and the Utilities Menu. The user must enter all numbers and letters (if applicable). Dashes are input by the program. The user is then asked to enter the first year of the 'Five-Year Outlook.' The range is (89 through 94). Once all parameters are entered, the user is given the option to send the reports to the screen [S], printer [P] or to return to the Main Menu [Q].

40K LOADER

NSN:3930-00-800-3929CT Life Exp= 8 Yrs

PART I: CURRENT STATUS	FY89	FY90	FY91	FY92	FY93
A. AUTHORIZATIONS	361	361	361	361	361
B. ASSETS ON HAND	286	286	286	286	286
C. DELTA	-75	-75	-75	-75	-75

PART II: DEPOT -----					
A. MEETS REPLACEMENT CRITERIA	181	154	147	120	107
B. CONSIDER FOR RETIREMENT	0	0	0	0	0
C. PLANNED DEPOT OVERHAUL	27	26	27	0	0
D. PLANNED DEPOT REMANUFACTURE	0	0	0	0	0
E. TOTAL DEPOT (C&D)	27	26	27	0	0
F. REMAINING ASSETS MEETING REPLACEMENT CRITERIA	154	128	120	120	107

PART III: INTEGRATION -----					
A. AUTHORIZATIONS	361	361	361	361	361
B. OVERAGE/SHORTAGE	-75	-75	-75	-75	-75
C. NEW ASSETS (PROJECTED BUY)	0	0	0	0	0
D. DEPOT REBUILD	27	26	27	0	0
E. DELTA	-75	-75	-75	-75	-75

PART IV: NARRATIVE/NOTES -----

Current plans are to enhance the 40K situation through the procurement of the 60K Loader. Milestones for the 60K acquisition are as follows:

Apr 90: Award Development Contract

Nov 92: Source selection

Feb 93: Award Production Contract

Feb 94: First Unit Delivery

Production contract will contain 224 units with option to procure up to 101 additional units.

Figure 17. Profile Report

The "QUICK-LIST" option provides a useful listing of names, NSNs and life expectancies for a single family group or all vehicles on file (by family). Here's a QUICK LIST:

Table 2. Vehicle Quick List

VEHICLE TYPE	NSN	LIFE
** FAMILY GROUP: C		
TRK FIRE CRS P-19	4210-00-406-9615	12
WATER TRK P-18	4210-01-137-5970	12
TRK FFGT CRS P-10	4210-00-540-2734	10
TRK FFGT PMR P-22 (P-12)	4210-00-224-4564	15
TRK FFGT PMR P-24 (P-8)	4210-00-233-1538	16
CRASH TRUCK P-15	4210-00-377-9412	12
CRASH TRUCK P-23 (P-2)	4210-00-702-6801	12
CRASH TRUCK P-20 (P-13)	4210-01-012-7147	10
TRK FFGT HIGH-REACH(P-21)	4210-01-057-0696	15
TRK FIRE MINI PUMPER	4210-01-241-3273	8
** FAMILY GROUP: L		
STRADDLE CRANE 50K (ATR)	3810-01-208-0996CT	10
STRADDLE CRANE 75K (NON-ATR)	3810-01-208-3338CT	10
25K STANDARD LOADER	3930-00-955-3293CT	10
10K STANDARD FORKLIFT	3930-00-856-6897CT	12
WBEL (WIDE BODY LOADER)	3930-01-069-1026CT	10
10K AT FORKLIFT	3930-00-488-9695CT	10
13K AT FORKLIFT	3930-01-126-0457CT	10
25K TACTICAL LOADER	3930-00-416-9521CT	8
40 FT ROLLERIZED TRAILER	2330-01-094-0007	25
40K LOADER	3930-00-800-3929CT	8
** FAMILY GROUP: R		
REFUELING VEHICLES R-5/9/11	2320-00-433-5696	10
** FAMILY GROUP: S		
SNOW PLOW TRK 5400 GVW	3825-00-443-7657	13
SNOW REMOVAL UNIT 3000 TPH	3825-01-096-5554	12
SWEEPER ROTARY BLOWER	3825-01-171-2798	7
TRK SNOW RML MLTPH 2000 TPH	3825-01-205-0450	12
** FAMILY GROUP: T		
TRAC ACFT TWG MB2	1740-00-143-8464YW	16
TRAC ACFT TWG MB4	1740-00-580-7990YW	16
TRAC ACFT TWG U-30	1740-00-101-9256YW	15
TRAC TOW SUPPORT EQUIP	1740-01-068-8945YW	12

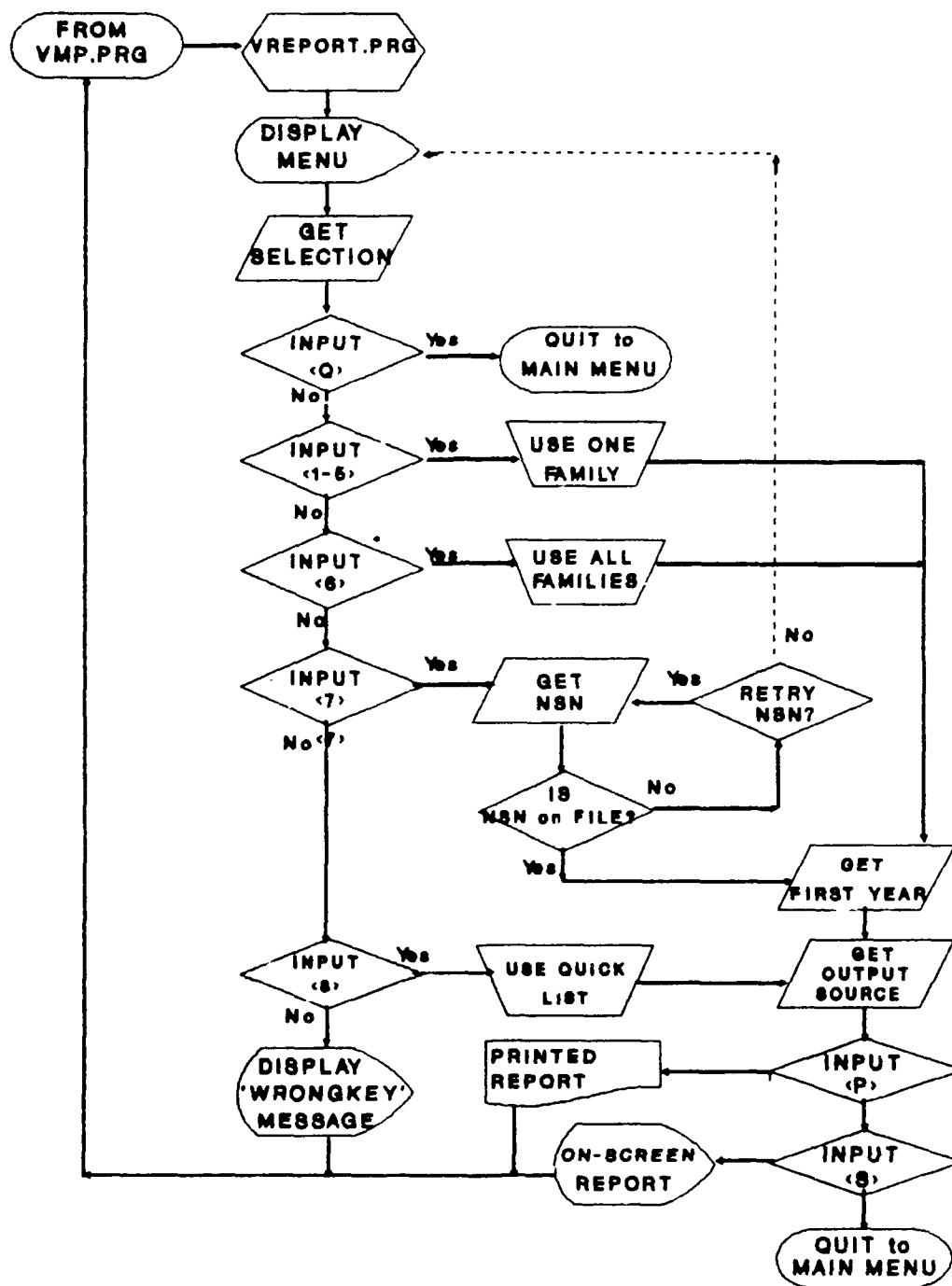


Figure 18. AVMP Reports Routine Flowchart

If the user selects to view the on-screen reports, the screen will go to the vehicle(s) selected and displayed Parts I, II, and III and wait for the user to press any key before continuing to Part IV. This process will repeat itself until there are no more vehicles in the database meeting the search criteria. If printing, the user must ensure any EpsonTM or IBMTM-compatible printer being used has sufficient paper and is 'on-line.' Once ready, just select the [P] option and the program will produce printed reports on 8.5 by 11.0 inch paper until there are no more vehicles in the search criteria.

When completed both the [S] screen and [P] printer reports selections return control to the Reports Menu. From there, the user may return to the Main Menu by entering [Q]. Figure 18 shows a flowchart of AVMP's Utilities Menu Routine.

Utilities Menu

Selection [3] from the Main Menu transfers control to the Utilities Menu (Figure 19). Selection [1], [2], or [3] enable the user to add, edit (or update), or delete records. The user may also select [4] to update the main database from 'transaction' or secondary files. Figure 20 shows a flowchart of AVMP's Utilities Menu Routine.

VMP UTILITIES MENU
1. ADD VEHICLES TO FILE
2. EDIT EXISTING VEHICLES
3. DELETE EXISTING VEHICLES
4. UPDATE MASTER FILE
 [Q]uit - Return to Main Menu

Figure 19. Utilities Menu

Adding a Record. Selection [1] takes the user to the 'Add Vehicle' menu (Figure 21). The user enters information on a new vehicle into the four highlighted blocks. the vehicle type will accept a maximum of 28 letters or numbers, converting all letters to capitals. The NSN is entered including all numbers and letters. The life expectancy in years, will accept any positive integer up to 99. The family group block accepts either [C,L,R,S, or T] to distinguish between the five groups in the USAF Vehicle Master Plan.

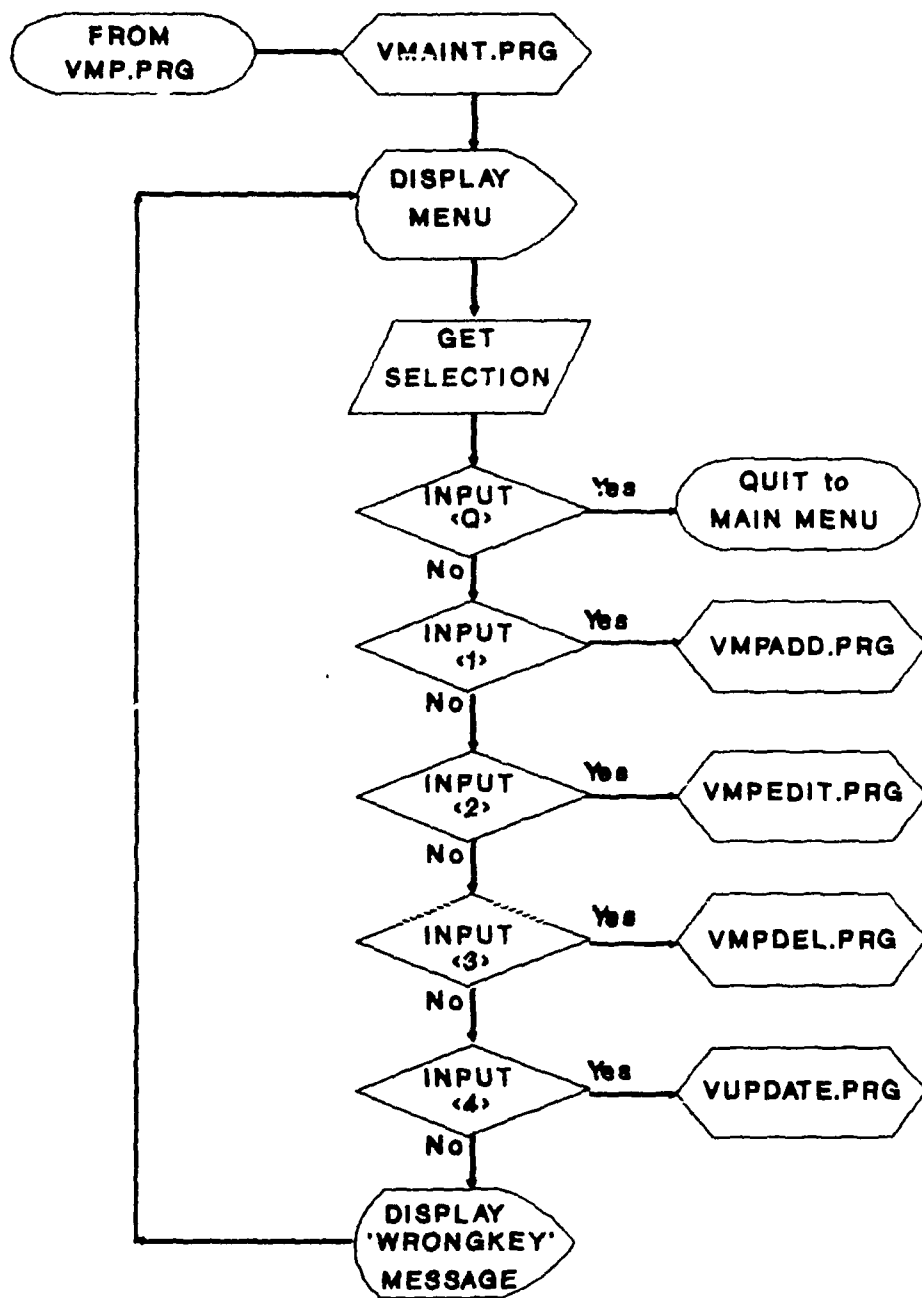


Figure 20. AVMP Utilities Menu Routine Flowchart

* A D D V E H I C L E *	
VEHICLE TYPE: 80K LOADER	
National Stock Number:	-----
Example: 3930-00-800-3929CT	
Life Expectancy:	(1 through 99 Years)
Family Group:	(Select C, L, R, S, or T)
[C]=CRASH/FIRE	[L]=MATERIAL HANDLING (463L)
[R]=REFUELING	[S]=SNOW REMOVAL [T]=TOWING
IS DATA CORRECT? [Y]es= SAVE * [N]o= Re-Enter	
[Q]uit to Utilities Menu (Lose Changes):	

Figure 21. Adding a Record

Once these four highlighted blocks are filled, the user verifies the accuracy of the data and enters [Y] to add the vehicle to the file, [N] to re-enter the data without adding what was just entered, or [Q] to return to the Main Menu.

If [Y] is entered, the program will search the existing database file to make sure the record does not already exist. If a match is encountered, the user must choose to overwrite the file or to re-enter another vehicle.

If the information is saved, the user is then asked if Narratives/Notes are to be added at this time. If Narratives are added, the program transfers control to the 'Narratives Retrieval Screen' (Figure 13) and accompanying

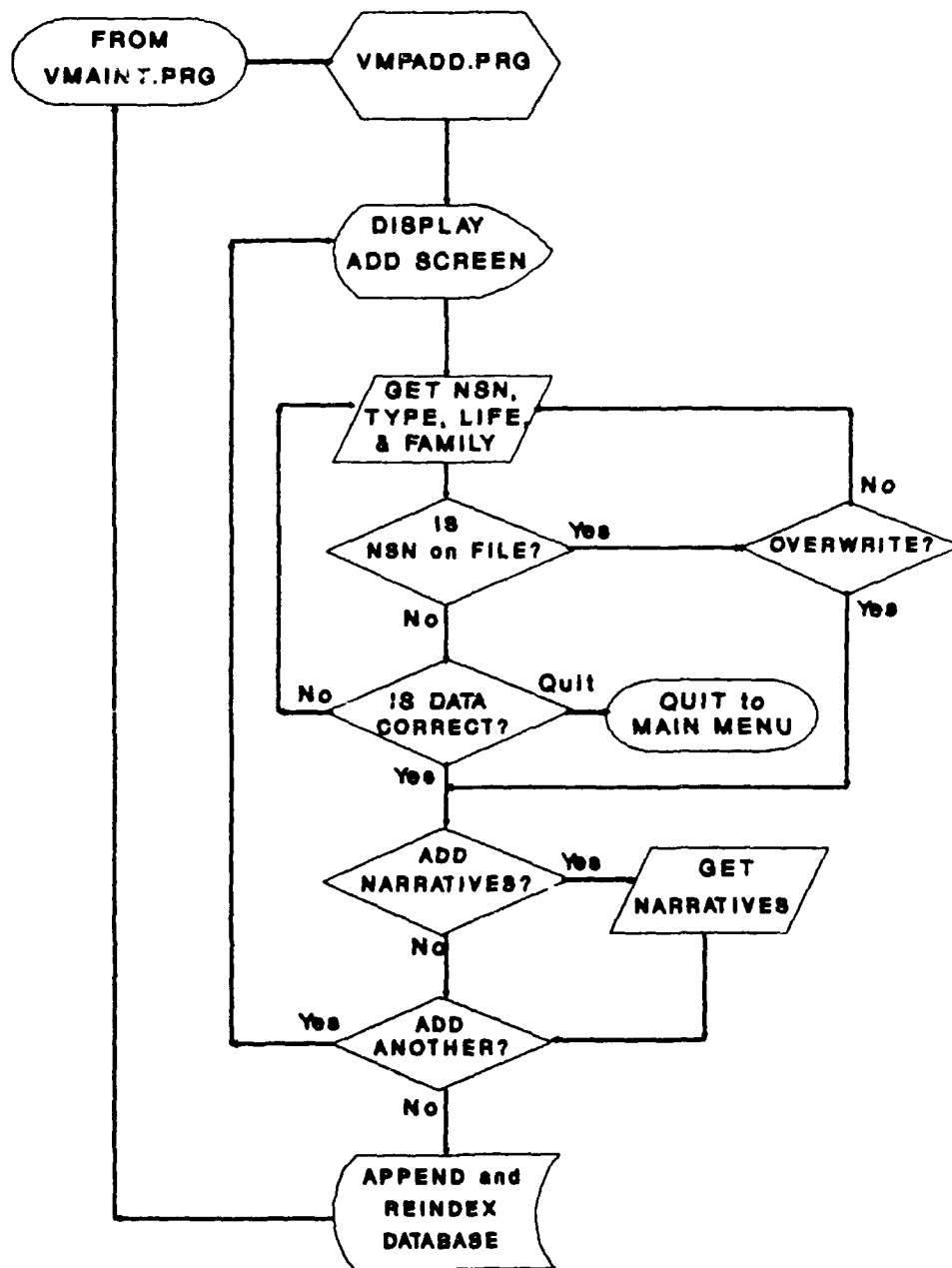


Figure 22. AVMP Vehicle Add Routine Flowchart

instructions examined earlier in this chapter. Procedures are identical at this point for adding contract narratives. After adding the user may add another vehicle or return to the Utilities Menu. Once the user is finished adding vehicles, the program automatically re-indexes the main file when the [Q] option is used to return to the Utilities Menu. This means that all vehicles in the new master file (including the new additions) are organized by NSN. This will prevent any report display or printout from appearing out of sequence. Figure 22 shows a flowchart of AVMP's Vehicle Add Routine.

Updating a Record. Selection [2] from the Utilities Menu transfers control to the Edit/Update routine (Figure 23). The user must first input the NSN including all numbers and letters. The program searches all records in the file and displays the "not found" screen if the NSN input by the user is not located. If found, the Edit Vehicle screen displays the information currently on file for the selected vehicle. The user is allowed to make the necessary changes throughout the four blocks (Type, NSN, Life Expectancy, and Family Group). After entering the last update, the user confirms the accuracy of the new information and chooses whether or not to edit the contract Narratives/Notes. If the narratives are updated, the program transfers control to the 'Narratives Retrieval

Screen' (Figure 13). Procedures for this process are detailed earlier in this chapter.

* EDIT VEHICLE *
VEHICLE TYPE: 80K LOADER
National Stock Number: 1111-22-333-4444YZ Example: 3930-00-800-3929CT
Life Expectancy: 20 (1 through 99 Years)
Family Group: L (Select C, L, R, S, or T)
[C]=CRASH/FIRE [L]=MATERIAL HANDLING (463L) [R]=REFUELING [S]=SNOW REMOVAL [T]=TOWING
IS DATA CORRECT? [Y]es= SAVE * [N]o= Re-Enter [Q]uit to Utilities Menu (Lose Changes):

Figure 23. Updating a Record

After updating the narratives, the user may select another vehicle NSN to update. Once there are no additional vehicles to edit, the user enters [Q] to return to the Utilities Menu. As in the Add Routine, once all changes are made to the vehicles being updated, the program automatically re-indexes the new file by NSN before displaying the Utilities Menu screen. Figure 24 shows a flowchart of AVMP's Vehicle Edit Routine.

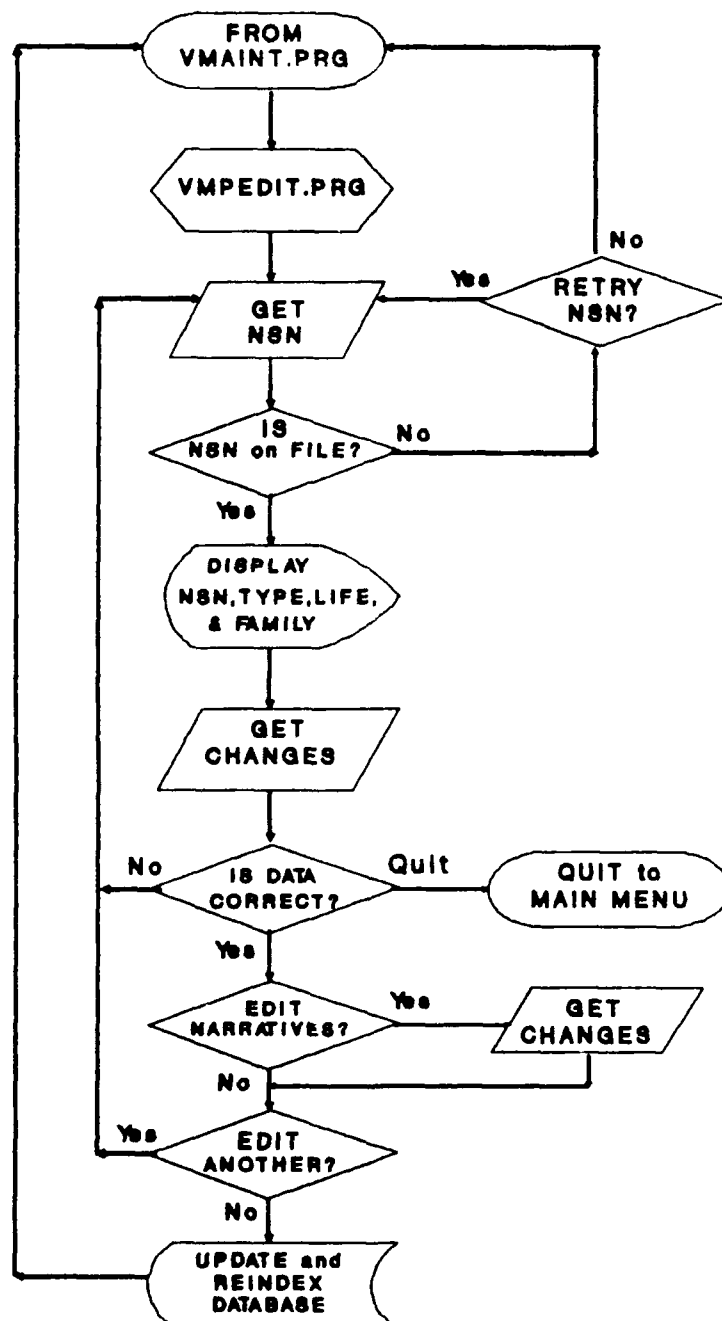


Figure 24. AVMP Vehicle Edit Routine Flowchart

Deleting a Record. Selection [3] from the Utilities Menu transfers control to the 'Deleting a Record' screen (Figure 25). The user inputs the NSN including all numbers and letters. The program displays a "not found" screen if the NSN is not located. If found, the Delete Vehicle screen displays the information currently on file for selected vehicle.

ENTER NSN OF VEHICLE YOU WISH TO DELETE	
ENTER STOCK NUMBER:	■ ■ ■ ■ - ■ ■ - ■ ■ ■ ■ - ■ ■ ■ ■ ■ ■
Example: 3930-00-800-3929CT	
Please Include ALL Numbers & Letters	

Figure 25. Delete a Record

The user is asked to verify the permanent removal of this vehicle. If the user responds [Y], the vehicle is "marked" for deletion. All information on the vehicle will be deleted so the user is not asked about the Narratives/Notes. The user may select to delete another vehicle in which case the NSN input screen re-appears. If no additional vehicles are to be deleted, the user enters [Q] which automatically 'packs' the database and returns the program to the Utilities Menu. Packing the database is the process that actually removes the files that were 'marked'

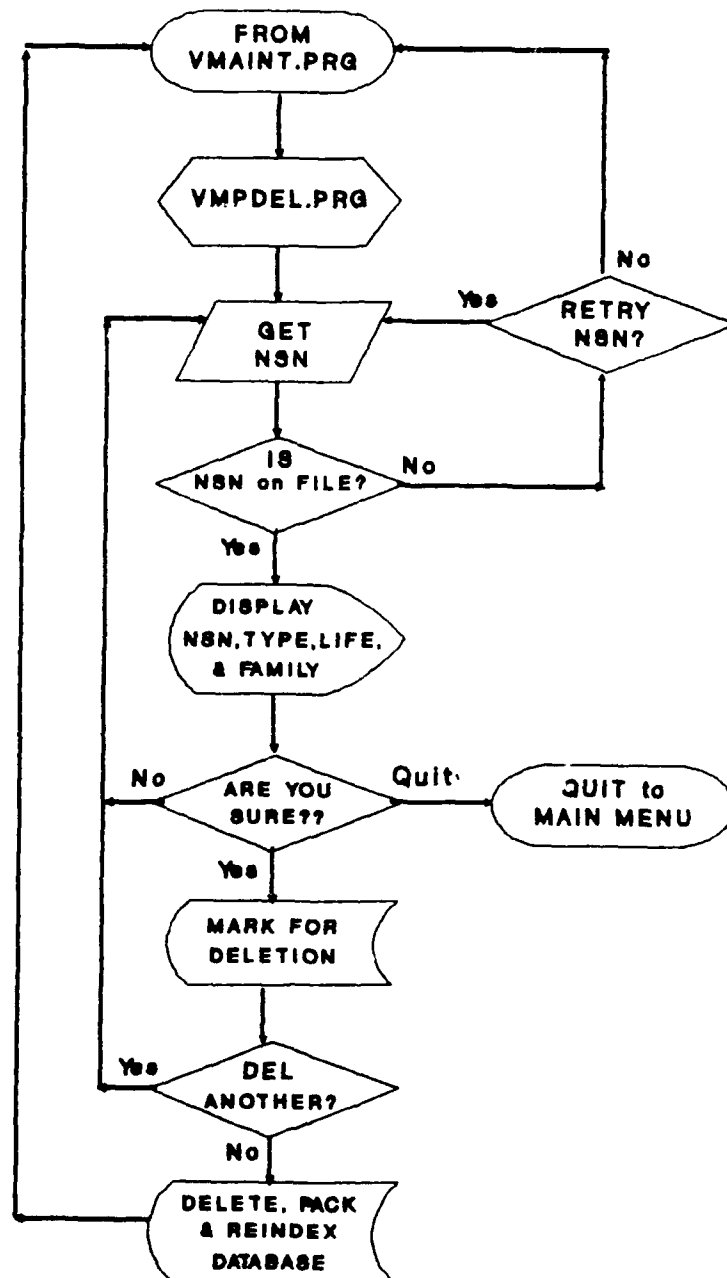
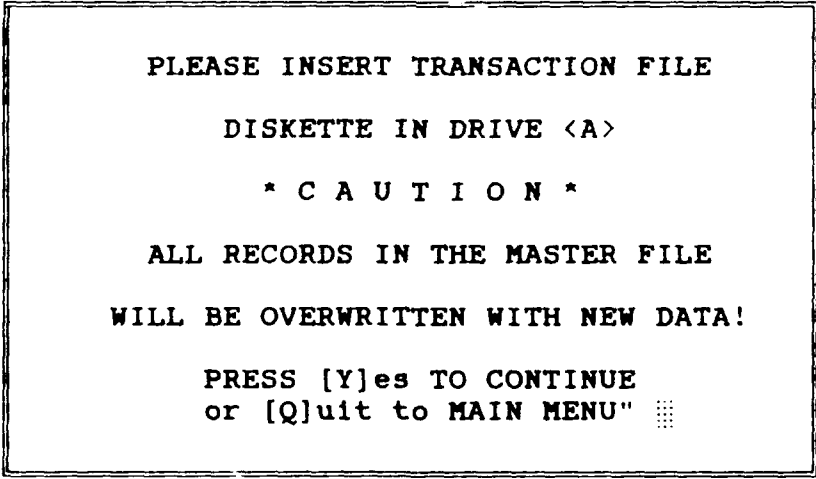


Figure 26. AVMP Vehicle Delete Routine Flowchart

earlier in the process. The packing is done simultaneously whether one or many records are marked.

Updating the Master File. Selection [4] from the Utilities Menu allows a master data file to be updated from one or more 'transaction' files. A program director could receive updated files from various PMs which would each be concerned with their particular family group. The director would then consolidate the information and update the master data file by following the on-screen commands for inserting and swapping floppy disks. The procedure is particularly useful during the semi-annual vehicle listing reconciliation performed by the WP-MMVV program director.

A rectangular box containing text instructions for inserting a transaction file diskette. The text is centered and reads: PLEASE INSERT TRANSACTION FILE, DISKETTE IN DRIVE <A>, * C A U T I O N *, ALL RECORDS IN THE MASTER FILE WILL BE OVERWRITTEN WITH NEW DATA!, PRESS [Y]es TO CONTINUE or [Q]uit to MAIN MENU" followed by a small grid of dots.

PLEASE INSERT TRANSACTION FILE
DISKETTE IN DRIVE <A>
* C A U T I O N *
ALL RECORDS IN THE MASTER FILE
WILL BE OVERWRITTEN WITH NEW DATA!
PRESS [Y]es TO CONTINUE
or [Q]uit to MAIN MENU" . . .

Figure 27 Transaction File Screen

The transaction file screen will appear (Figure 27) prompting the user to input the transaction disk into drive

<A>. The transaction disks must contain the following three files:

Vehicles.dbf Vehicles.dbt NSN.ndx.

Important! AVMP must be set up on the system's hard drive during this routine. The hard drive Master File will be updated with information from transaction files contained on 5.25 inch floppy disks. If these files are not found in the transaction file disk, a warning screen will appear. Pressing <enter> will return the program to the DOS path screen--you may then quit back to the MAIN MENU.

Also, the full Dos path must be used to set up AVMP on the computer storing the master file. For example, "C:\AVMP" (the default setting) defines the AVMP directory located in the <C> Drive as the Dos path (22:136).

After the user enters the Dos path and verifies that the transection files are present, all existing data on the Master File will be overwritten with new data from the transaction disk. This process will be carried out for all vehicles with matching NSNs. Any records contained in the transaction file which were not previously found in the Master File will be added during this procedure. This is a dangerous procedure which could have disastrous consequences on you Master File if disk management procedures are not followed. Extreme care should be taken! Figure 28 shows the Master File Update Routine Flowchart.

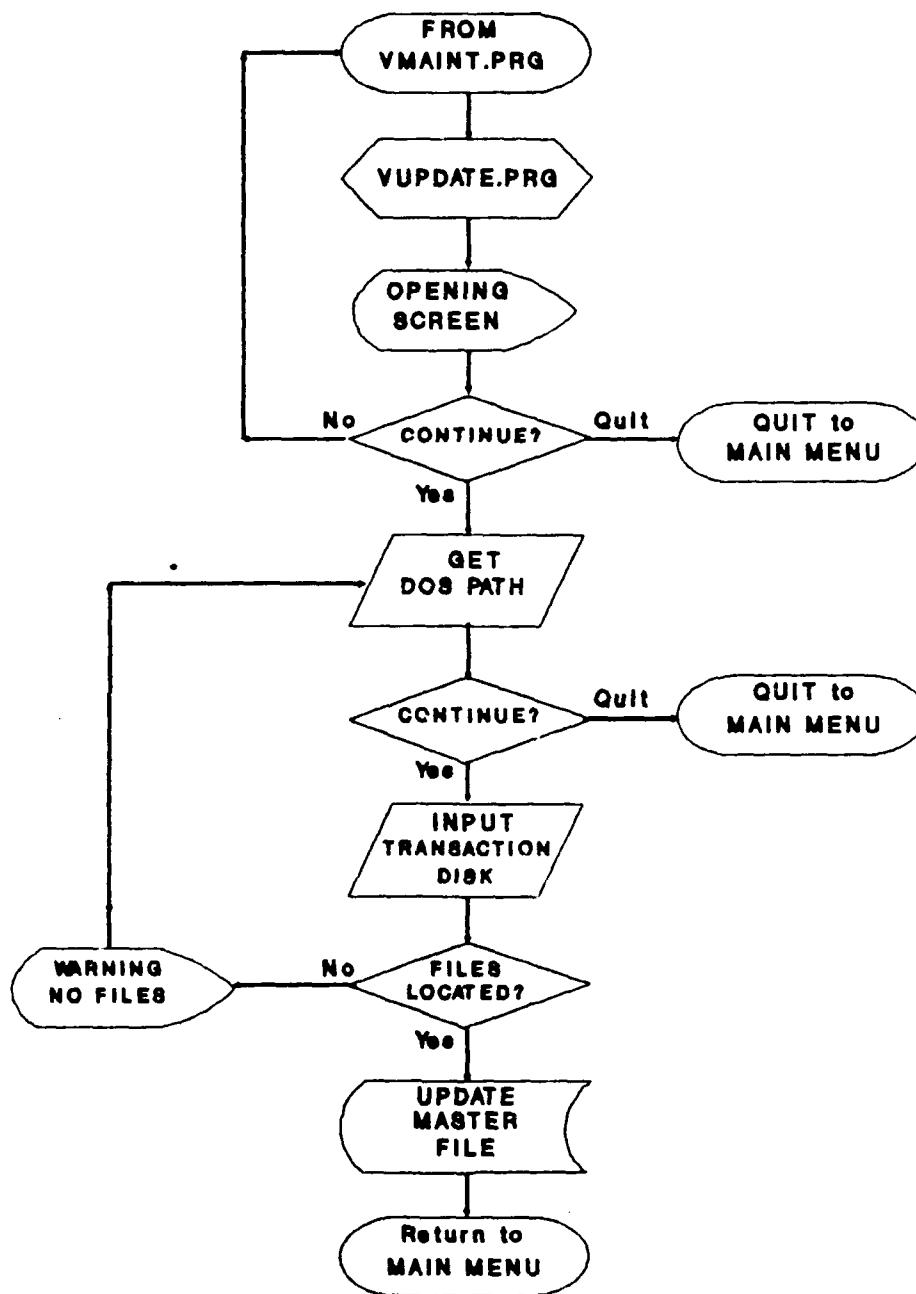


Figure 28. AVMP Master File Update Routine Flowchart

This chapter answered the research questions presented in Chapter One. The program managers assigned to WR-ALC's Vehicle Management section are tasked to manually update information on 29 vehicles found in the USAF Vehicle Master Plan. The automation process was accomplished by creating a database management system application program using Ashton-Tate's dBase III Plus™. This program, the Automated Vehicle Master Plan, accepts user inputs through a series of on-screen menus and will operate on any IBM™ compatible microcomputer. The user may freely add, edit, or delete vehicle information contained on the system's hard drive or floppy disk.

V. Summary, Conclusions, and Recommendations

Summary.

This research was conducted to examine the feasibility of automating the USAF Vehicle Master Plan implemented at Warner Robins Air Logistics Center by the Materiel Management Vehicle Branch. The new Master Plan concept combined vehicle authorizations, assets on hand, contract, delivery schedule, and projected buys under one report format. The initial plan was issued on 31 May 89 by WR-ALC/MMVV. This initial plan was automated only to the extent of storing the data for the plan outline and the five-year vehicle profiles on microcomputer word processing software. The plan initially dealt with 29 special purpose vehicles with plans to expand the number of vehicle types in the future. This plan was examined and found to be a prime candidate for automation.

In evaluating the software packages available, the decision was made to use Ashton-Tate's dBaseIII PlusTM database management application software. Once developed the Automated Vehicle Master Plan (AVMP) was translated into machine code using the ClipperTM compiler to enable the AVMP to operate on any IBM-compatible microcomputer even without dBase installed. AVMP was field tested at Warner Robins and

a complete listing of the source code was presented to the VMP program director.

Conclusions

During this study, five research questions were answered and a microcomputer DBMS application program was developed. The DBMS application had to store data, perform mathematical calculations and output vehicle profile information to a screen or printer in order to satisfy the user's requirements. AVMP meets and exceeds all of these requirements. As a "stand-alone" program, its only requirement is an IBM-compatible microcomputer. The program disk used during testing and evaluation contains all the necessary information for a 10-year span of all 29 vehicle types. The program can run using a single 5.25 inch floppy disk and still have the capability of expanding to over 200 vehicle types on that single disk. If used on a hard drive, the access time is greatly reduced thereby enabling the program to run faster. The number of vehicles which the user may input is restricted only by the size of the available hard drive storage space. Each vehicle takes up approximately 1,700 bytes of disk space.

The program is expected to reduce the program managers' (PMs) time spent reconciling each vehicle type from three hours to approximately 15 minutes. During the annual fiscal year changeover, data from the previous year is automatically stored on the disk (floppy or hard-disk) and the

user's "initial year" becomes the new first year in the five-year outlook.

Recommendations

The best computer program available can be of little service if it is not used. An initial visit to the vehicle management office in March 1989 revealed a condition not uncommon in many other Air Force work centers. The office possessed eight Zenith Z-248TM microcomputers all with 20 megabyte hard drives and several software packages loaded on the hard drive. Of the eight PMs interviewed, only one had any personal computer experience. None of the eight machines contained any MS-DOS tutorials. None of the PMs had any formal training on the hardware or the software. The machines were being used almost entirely for word processing.

It is not cost-effective to make a large investment in computer hardware and software if the users have no knowledge of how to use it. Training the users in how to use the new office automation devices is imperative if these devices are to ultimately improve efficiency.

AVMP was developed to operate through user commands selected from on-screen menus. The user needs no previous microcomputer experience. A user's manual accompanies the program as well as a tutorial which guides the user through a series of operations. This tutorial is highly recommended since it will familiarize the user with all the menus

contained in the program and access the database file from several locations throughout the program.

Although designed around the formal USAF Vehicle Master Plan format, AVMP is designed to be used for tracking vehicles at any operational level. Vehicle Managers at the MAJCOM or base level can easily track information on vehicles unique to their organizations and have rapid access to the latest information available to them from Warner Robins ALC.

The Air Force Logistics Command (AFLC) is presently working on a master plan format for the missile maintenance equipment. With minor modifications, AVMP can easily be adapted to automate any plan with a similar structure. Future expansion of the program may include adaptation to general-purpose vehicles and expansion to include contracted costs for each vehicle type.

Appendix A: Automated Vehicle Master Plan Data Dictionary

The AVMP data dictionary is organized into one database named VEHICLES.DBF. The information for the vehicle contract narratives is contained in the VEHICLES.DBT. The template column lists the characters AVMP will accept as input to that field. An 'A' is an alpha character, a '9' is a numeric value, and an 'X' denotes that either an alpha or numeric character is allowed.

The field names below are abbreviated as follows:

Auth(yr) = Authorizations for FY shown
 AOH(yr) = Assets on Hand for FY shown
 TOTC(yr) = Total Current Profile for FY shown
 MRC(yr) = Meets Replacement Criteria for FY shown
 CFR(yr) = Consider for Retirement for FY shown
 PDO(yr) = Planned Depot Overhaul for FY shown
 PDR(yr) = Planned Depot Remanufacture for FY shown
 TOTD(yr) = Total Depot for FY shown
 RAMR(yr) = Remaining Assets Meeting Replacement Criteria
 for FY shown
 OS(yr) = Overage/Shortage for FY shown
 NASS(yr) = New Assets for FY shown
 TOTI(yr) = Total Integration for FY shown

VEHICLES.DBF

Field	Field Name	Type	Width	Template
1	FAMILY	Character	1	X
2	TYPE	Character	28	XXXXXXXXXXXXXXXXXXXXX XXXXXXXXX
3	NSN	Character	18	99999999999999AA
4	LIFE	Numeric	2	99
5	CONTRACT	Memo	10	(Max 5000-X's)
6	AUTH89	Numeric	5	99999
7	AUTH90	Numeric	5	99999
8	AUTH91	Numeric	5	99999
9	AUTH92	Numeric	5	99999
10	AUTH93	Numeric	5	99999
11	AUTH94	Numeric	5	99999
12	AUTH95	Numeric	5	99999
13	AUTH96	Numeric	5	99999
14	AUTH97	Numeric	5	99999
15	AUTH98	Numeric	5	99999
16	AOH89	Numeric	5	99999
17	AOH90	Numeric	5	99999
18	AOH91	Numeric	5	99999
19	AOH92	Numeric	5	99999

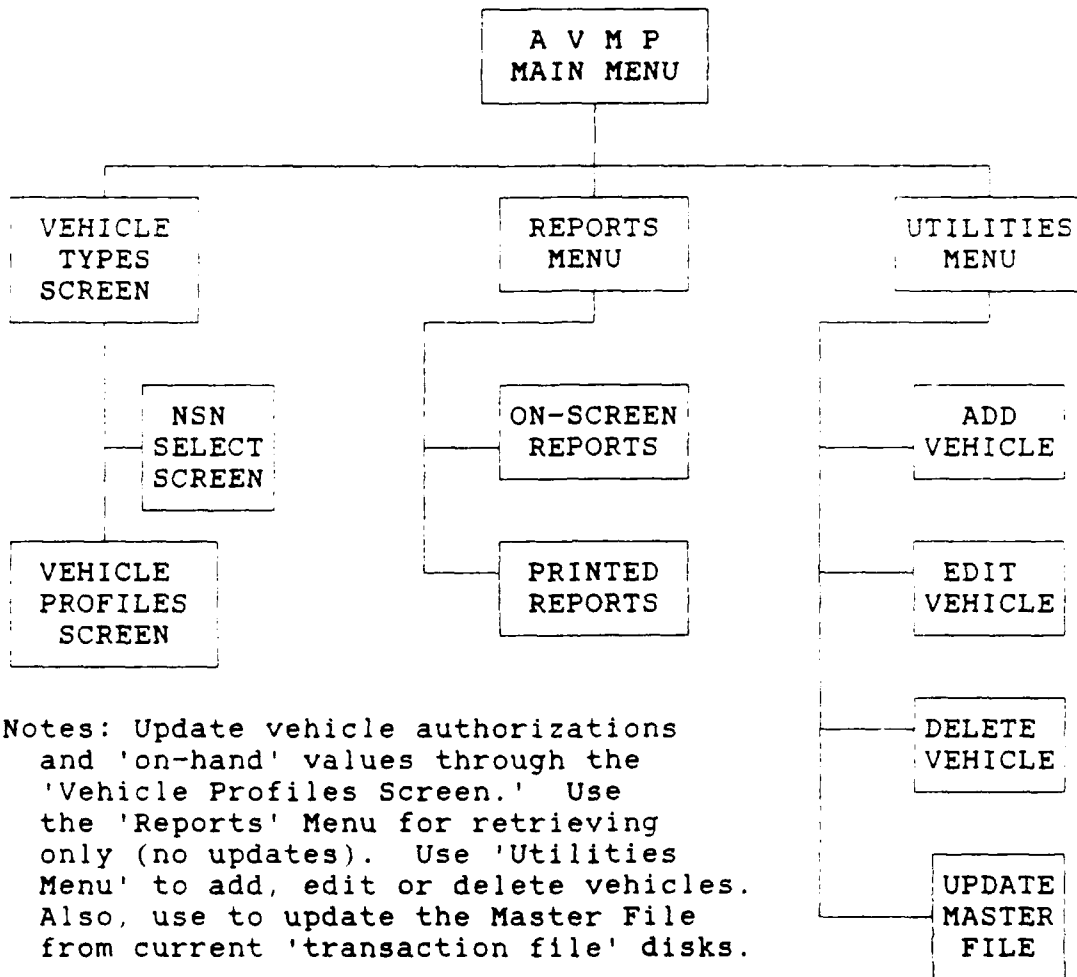
20	AOH93	Numeric	5	99999
21	AOH94	Numeric	5	99999
22	AOH95	Numeric	5	99999
23	AOH96	Numeric	5	99999
24	AOH97	Numeric	5	99999
25	AOH98	Numeric	5	99999
26	TOTC89	Numeric	5	99999
27	TOTC90	Numeric	5	99999
28	TOTC91	Numeric	5	99999
29	TOTC92	Numeric	5	99999
30	TOTC93	Numeric	5	99999
31	TOTC94	Numeric	5	99999
32	TOTC95	Numeric	5	99999
33	TOTC96	Numeric	5	99999
34	TOTC97	Numeric	5	99999
35	TOTC98	Numeric	5	99999
36	MRC89	Numeric	5	99999
37	MRC90	Numeric	5	99999
38	MRC91	Numeric	5	99999
39	MRC92	Numeric	5	99999
40	MRC93	Numeric	5	99999
41	MRC94	Numeric	5	99999
42	MRC95	Numeric	5	99999
43	MRC96	Numeric	5	99999
44	MRC97	Numeric	5	99999
45	MRC98	Numeric	5	99999
46	CFR89	Numeric	5	99999
47	CFR90	Numeric	5	99999
48	CFR91	Numeric	5	99999
49	CFR92	Numeric	5	99999
50	CFR93	Numeric	5	99999
51	CFR94	Numeric	5	99999
52	CFR95	Numeric	5	99999
53	CFR96	Numeric	5	99999
54	CFR97	Numeric	5	99999
55	CFR98	Numeric	5	99999
56	PDO89	Numeric	5	99999
57	PDO90	Numeric	5	99999
58	PDO91	Numeric	5	99999
59	PDO92	Numeric	5	99999
60	PDO93	Numeric	5	99999
61	PDO94	Numeric	5	99999
62	PDO95	Numeric	5	99999
63	PDO96	Numeric	5	99999
64	PDO97	Numeric	5	99999
65	PDO98	Numeric	5	99999
66	PDR89	Numeric	5	99999
67	PDR90	Numeric	5	99999
68	PDR91	Numeric	5	99999
69	PDR92	Numeric	5	99999
70	PDR93	Numeric	5	99999

71	PDR94	Numeric	5	99999
72	PDR95	Numeric	5	99999
73	PDR96	Numeric	5	99999
74	PDR97	Numeric	5	99999
75	PDR98	Numeric	5	99999
76	TOTD89	Numeric	5	99999
77	TOTD90	Numeric	5	99999
78	TOTD91	Numeric	5	99999
79	TOTD92	Numeric	5	99999
80	TOTD93	Numeric	5	99999
81	TOTD94	Numeric	5	99999
82	TOTD95	Numeric	5	99999
83	TOTD96	Numeric	5	99999
84	TOTD97	Numeric	5	99999
85	TOTD98	Numeric	5	99999
86	RAMR89	Numeric	5	99999
87	RAMR90	Numeric	5	99999
88	RAMR91	Numeric	5	99999
89	RAMR92	Numeric	5	99999
90	RAMR93	Numeric	5	99999
91	RAMR94	Numeric	5	99999
92	RAMR95	Numeric	5	99999
93	RAMR96	Numeric	5	99999
94	RAMR97	Numeric	5	99999
95	RAMR98	Numeric	5	99999
96	OS89	Numeric	5	99999
97	OS90	Numeric	5	99999
98	OS91	Numeric	5	
99	OS92	Numeric	5	99999
100	OS93	Numeric	5	99999
101	OS94	Numeric	5	99999
102	OS95	Numeric	5	99999
103	OS96	Numeric	5	99999
104	OS97	Numeric	5	99999
105	OS98	Numeric	5	99999
106	NASS89	Numeric	5	99999
107	NASS90	Numeric	5	99999
108	NASS91	Numeric	5	99999
109	NASS92	Numeric	5	99999
110	NASS93	Numeric	5	99999
111	NASS94	Numeric	5	99999
112	NASS95	Numeric	5	99999
113	NASS96	Numeric	5	99999
114	NASS97	Numeric	5	99999
115	NASS98	Numeric	5	99999
116	TOTI89	Numeric	5	99999
117	TOTI90	Numeric	5	99999
118	TOTI91	Numeric	5	99999
119	TOTI92	Numeric	5	99999
120	TOTI93	Numeric	5	99999

121	TOTI94	Numeric	5	99999
122	TOTI95	Numeric	5	99999
123	TOTI96	Numeric	5	99999
124	TOTI97	Numeric	5	99999
125	TOTI98	Numeric	5	99999
** Total **			660	

Appendix B: Automated Vehicle Master Plan
System Program Code

The program modules are set up as follows:



Notes: Update vehicle authorizations and 'on-hand' values through the 'Vehicle Profiles Screen.' Use the 'Reports' Menu for retrieving only (no updates). Use 'Utilities Menu' to add, edit or delete vehicles. Also, use to update the Master File from current 'transaction file' disks.

Figure 29. AVMP Program Modules

* Program...: VMP.PRG
* Author....: LT HANS GARCIA
* Date.....: 08/15/89
* Notice....: Copyright (c) 1989, LT HANS GARCIA
* All Rights Reserved
*

SET TALK OFF
SET BELL OFF
SET STATUS OFF
SET ESCAPE ON
SET CONFIRM ON
SET PROCEDURE TO UTILITY
SET COLOR TO GR+/N,W+/R,B
ON ERROR DO ErrTrap
PUBLIC PADNSN, TRYAGAIN, DOALL, MTYPE
CLEAR

HOR = 2
SET COLOR TO W+/N,W+/R,B
DO WHILE HOR <= 77
 @ 10, HOR SAY "A "
 HOR = HOR + 4
ENDDO (HOR)

HOR = 3
SET COLOR TO R+/N,W+/R,B
DO WHILE HOR <= 77
 @ 11, HOR SAY "V "
 HOR = HOR + 4
ENDDO (HOR)

HOR = 3
SET COLOR TO W+/N,W+/R,B
DO WHILE HOR <= 77
 @ 12, HOR SAY " M "
 HOR = HOR + 4
ENDDO (HOR)

HOR = 3
SET COLOR TO B+/N,W+/R,B
DO WHILE HOR <= 76
 @ 13, HOR SAY " P "
 HOR = HOR + 4
ENDDO (HOR)

CT = 0
DO WHILE CT <= 300 && Pause
 CT = CT + 1
ENDDO

```

SET COLOR TO GR+/B,W+/R,B
DO WHILE .T.

```

```

CLEAR

```

```

@ 4, 20 TO 20, 60 DOUBLE
@ 5, 32 SAY [A U T O M A T E D]
@ 7, 22 SAY [V E H I C L E   M A S T E R   P L A N]
@ 9, 28 SAY [*   M A I N   M E N U   *]
@ 10, 21 TO 10, 59 DOUBLE
@ 12, 31 SAY [1. VEHICLE PROFILES]
@ 14, 31 SAY [2. REPORTS]
@ 16, 31 SAY [3. UTILITIES]
@ 18, 31 SAY '[Q]uit AVMP'
STORE " " TO selectnum
@ 20, 35 SAY " SELECT      "
@ 20, 43 GET selectnum PICTURE "@! X"
READ

```

```

DO CASE

```

```

CASE selectnum = "1"
* DO VEHICLE PROFILES MENU
DO VTYPE

```

```

CASE selectnum = "2"
* DO REPORTS
DO VREPORT

```

```

CASE selectnum = "3"
* DO MAIN DATABASE MAINTENANCE
DO VMAINT

```

```

CASE selectnum = "Q"

```

```

CLEAR ALL
SET BELL ON
SET SCOREBOARD OFF
@ 0,0 Clear
@ 11, 23 SAY REPLICATE (" ",27) + " "
@ 12, 23 SAY REPLICATE (" ",27)
@ 13, 23 SAY REPLICATE (" ",27)
@ 12, 51 SAY " "
@ 13, 50 SAY " "
@ 14, 26 SAY "O O"
@ 14, 46 SAY "O      O      O"
BYE = " THANKS FOR USING VMP! "
@ 12, 25 GET BYE
CLEAR GETS
CLOSE DATA
?CHR(7)
?CHR(7)

```

```

        CT = 0
        DO WHILE CT <= 300    && Pause
            CT = CT + 1
        ENDDO
    QUIT

    OTHERWISE
        DO WRONGKEY
    ENDCASE

ENDDO (T)
RETURN
* EOF: VMP.PRG
-----
* Program...: VTYPE.PRG
* Author....: 1LT HANS GARCIA
* Date.....: 08/15/89
* Notice....: Copyright (c) 1989, 1LT HANS GARCIA
* All Rights Reserved
* CALLED FROM VMP.PRG
*
SET COLOR TO GR+/B,W+/R,B
CLEAR ALL
SET TALK OFF
SET BELL OFF
SET STATUS OFF
SET ESCAPE OFF
SET CONFIRM ON
SET EXACT ON
SET SCOREBOARD OFF
PUBLIC MTYPE,Nchoice

CLEAR

VCHOICE = " "
DO WHILE VCHOICE # "M"    && Do Selection is not 'M'
    @ 0,27 TO 2,43
    @ 1,29 SAY [VEHICLE TYPES]
    @ 3,14 SAY [SELECT A VEHICLE TYPE FROM THE LIST BELOW]
    @ 5, 4 SAY [01  STRADDLE CRANE 50K ATR]
    @ 5,41 SAY [16  REFUELING VEHICLES R-5/9/11]
    @ 6, 4 SAY [02  STRADDLE CRANE 75K (Non-ATR)]
    @ 6,41 SAY [17  TRK FIRE CRS P-19]
    @ 7, 4 SAY [03  25K STANDARD LOADER]
    @ 7,41 SAY [18  WATER TRK P-18]
    @ 8, 4 SAY [04  10K STANDARD FORKLIFT]
    @ 8,41 SAY [19  TRK FFGT CRS P-10]
    @ 9, 4 SAY [05  WBEL (WIDE BODY LOADER)]
    @ 9,41 SAY [20  TRK FFGT PMR P-22 (P-12)]
    @ 10, 4 SAY [06  10K AT FORKLIFT]
    @ 10,41 SAY [21  TRK FFGT PMR P-24 (P-8)]

```

```

@ 11, 4 SAY [07 13K AT FORKLIFT]
@ 11,41 SAY [22 CRASH TRUCK P-15]
@ 12, 4 SAY [08 25K TACTICAL LOADER]
@ 12,41 SAY [23 CRASH TRUCK P-23 (P-2)]
@ 13, 4 SAY [09 40 FT ROLLERIZED TRAILER]
@ 13,41 SAY [24 CRASH TRUCK P-20 (P-13)]
@ 14, 4 SAY [10 40K LOADER]
@ 14,41 SAY [25 TRK FFGT HIGH-REACH(P-21)]
@ 15, 4 SAY [11 60K LOADER]
@ 15,41 SAY [26 TRK FIRE MINI PUMPER]
@ 16, 4 SAY [12 TRAC ACFT TWG MB2]
@ 16,41 SAY [27 SNO PL TRK 54000GVW]
@ 17, 4 SAY [13 TRAC ACFT TWG MB4]
@ 17,41 SAY [28 SNOW REMOVAL UNIT 3000 TPH]
@ 18, 4 SAY [14 TRAC ACFT TWG U-30]
@ 18,41 SAY [29 SWEEPER ROTARY BLOWER]
@ 19, 4 SAY [15 TRAC TOW SUPPORT EQUIP]
@ 19,41 SAY [30 TRK SNOW RML MLTPU 2000 TPH]

```

```

@ 22,12 SAY "SELECT [Q]uit to MAIN MENU,"
@ 22,40 SAY "01-30 for 5-YEAR OUTLOOK,"
@ 23,10 SAY " or [M] FOR MANUAL ENTRY"
@ 23,37 SAY "(National Stock Number):";
GET VCHOICE PICTURE "@! XX"
READ

```

```

USE VEHICLES INDEX NSN && USE VEHICLES.DBF

```

```

DO CASE

```

```

CASE VCHOICE = "1" .OR. VCHOICE = "01"
  @ 0,0 clear
  NSN = "3810-01-208-0996CT"
  FIND &NSN
  MTYPE = RECNO()
  DO VPROFILE

```

```

CASE VCHOICE = "2" .OR. VCHOICE = "02"
  @ 0,0 clear
  NSN = "3810-01-208-3338CT"
  FIND &NSN
  MTYPE = RECNO()
  DO VPROFILE

```

```

CASE VCHOICE = "3" .OR. VCHOICE = "03"
  @ 0,0 clear
  NSN = "3930-00-955-3293CT"
  FIND &NSN
  MTYPE = RECNO()
  DO VPROFILE

```


CASE VCHOICE = "4" .OR. VCHOICE = "04"
@ 0,0 clear
NSN = "3930-00-856-6897CT"
FIND &NSN
MTYPE = RECNO()
DO VPROFILE

CASE VCHOICE = "5" .OR. VCHOICE = "05"
@ 0,0 clear
NSN = "3930-01-069-1026CT"
FIND &NSN
MTYPE = RECNO()
DO VPROFILE

CASE VCHOICE = "6" .OR. VCHOICE = "06"
@ 0,0 clear
NSN = "3930-00-488-9695CT"
FIND &NSN
MTYPE = RECNO()
DO VPROFILE

CASE VCHOICE = "7" .OR. VCHOICE = "07"
@ 0,0 clear
NSN = "3930-01-126-0457CT"
FIND &NSN
MTYPE = RECNO()
DO VPROFILE

CASE VCHOICE = "8" .OR. VCHOICE = "08"
@ 0,0 clear
NSN = "3930-00-416-9521CT"
FIND &NSN
MTYPE = RECNO()
DO VPROFILE

CASE VCHOICE = "9" .OR. VCHOICE = "09"
@ 0,0 clear
NSN = "2330-01-094-0007"
FIND &NSN
MTYPE = RECNO()
DO VPROFILE

CASE VCHOICE = "10"
@ 0,0 clear
NSN = "3930-00-800-3929CT"
FIND &NSN
MTYPE = RECNO()
DO VPROFILE

```

CASE VCHOICE = "11"
  @ 0,0 clear
  NSN = "7777-77-777-7777"
  FIND &NSN
  MTYPE = RECNO()
  DO VPROFILE

CASE VCHOICE = "12"
  @ 0,0 clear
  NSN = "1740-00-143-8464YW"
  FIND &NSN
  MTYPE = RECNO()
  DO VPROFILE

CASE VCHOICE = "13"
  @ 0,0 clear
  NSN = "1740-00-580-7990YW"
  FIND &NSN
  MTYPE = RECNO()
  DO VPROFILE

CASE VCHOICE = "14"
  @ 0,0 clear
  NSN = "1740-00-101-9256YW"
  FIND &NSN
  MTYPE = RECNO()
  DO VPROFILE

CASE VCHOICE = "15"
  @ 0,0 clear
  NSN = "1740-01-068-8945YW"
  FIND &NSN
  MTYPE = RECNO()
  DO VPROFILE

CASE VCHOICE = "16"
  @ 0,0 clear
  NSN = "2320-00-433-5696"
  FIND &NSN
  MTYPE = RECNO()
  DO VPROFILE

CASE VCHOICE = "17"
  @ 0,0 clear
  NSN = "4210-00-406-9615"
  FIND &NSN
  MTYPE = RECNO()
  DO VPROFILE

```

```

CASE VCHOICE = "18"
  @ 0,0 clear
  NSN = "4210-01-137-5970"
  FIND &NSN
  MTYPE = RECNO()
  DO VPROFILE

CASE VCHOICE = "19"
  @ 0,0 clear
  NSN = "4210-00-540-2734"
  FIND &NSN
  MTYPE = RECNO()
  DO VPROFILE

CASE VCHOICE = "20"
  @ 0,0 clear
  NSN = "4210-00-224-4564"
  FIND &NSN
  MTYPE = RECNO()
  DO VPROFILE

CASE VCHOICE = "21"
  @ 0,0 clear
  NSN = "4210-00-233-1538"
  FIND &NSN
  MTYPE = RECNO()
  DO VPROFILE

CASE VCHOICE = "22"
  @ 0,0 clear
  NSN = "4210-00-377-9412"
  FIND &NSN
  MTYPE = RECNO()
  DO VPROFILE

CASE VCHOICE = "23"
  @ 0,0 clear
  NSN = "4210-00-702-6801"
  FIND &NSN
  MTYPE = RECNO()
  DO VPROFILE

CASE VCHOICE = "24"
  @ 0,0 clear
  NSN = "4210-01-012-7147"
  FIND &NSN
  MTYPE = RECNO()
  DO VPROFILE

```

```

CASE VCHOICE = "25"
  @ 0,0 clear
  NSN = "4210-01-057-0696"
  FIND &NSN
  MTYPE = RECNO()
  DO VPROFILE

CASE VCHOICE = "26"
  @ 0,0 clear
  NSN = "4210-01-241-3273"
  FIND &NSN
  MTYPE = RECNO()
  DO VPROFILE

CASE VCHOICE = "27"
  @ 0,0 clear
  NSN = "3825-00-443-7657"
  FIND &NSN
  MTYPE = RECNO()
  DO VPROFILE

CASE VCHOICE = "28"
  @ 0,0 clear
  NSN = "3825-01-096-5554"
  FIND &NSN
  MTYPE = RECNO()
  DO VPROFILE

CASE VCHOICE = "29"
  @ 0,0 clear
  NSN = "3825-01-171-2798"
  FIND &NSN
  MTYPE = RECNO()
  DO VPROFILE

CASE VCHOICE = "30"
  @ 0,0 clear
  NSN = "3825-01-171-0450"
  FIND &NSN
  MTYPE = RECNO()
  DO VPROFILE

CASE VCHOICE = "Q" .OR. VCHOICE = " Q"
  CLEAR ALL
  RETURN

```

```

***** In Case VCHOICE = [M] *****

CASE VCHOICE = "M " .OR. VCHOICE = " M"
  USE VEHICLES INDEX NSN
  CLEAR
  MTYPE = " "
  TRYAGAIN = " "
  PADNSN = " "

  DO MANUAL  && SEARCH FOR A MANUALLY ENTERED NSN#

    IF TRYAGAIN = "N"  && IF NSN IS NOT FOUND, RETURN
      LOOP            && TO THE VEHICLE TYPES SCREEN
    ENDIF

  DO VPROFILE

Otherwise
  DO WRONGKEY
  VCHOICE = " "

ENDCASE (VCHOICE not 00 thru 32)

ENDDO (VCHOICE not 'M')

RETURN

* EOF VTYPE.PRG
-----
* Program...: VPROFILE.PRG
* Author...: 1LT HANS GARCIA
* Date.....: 08/15/89
* Notice...: Copyright (c) 1989, 1LT HANS GARCIA
* All Rights Reserved
* CALLED FROM VTYPE.PRG
*
SET COLOR TO GR+/B,W+/R,B
SET TALK OFF
SET BELL OFF
SET STATUS OFF
SET ESCAPE ON
SET CONFIRM ON
SET SCOREBOARD OFF
PADDTYPE = " "+TYPE
PADDNSN = " "+NSN
PADDLIFE = " "+LTRIM(STR(LIFE))

USE VEHICLES && INDEX NSN

GOTO MTYPE

```

```

DO WHILE .NOT. EOF()
ILIYEAR = " "
CLEAR

@ 2, 15 TO 10, 64 DOUBLE
@ 4, 23 SAY "VEHICLE MASTER PLAN 5-YEAR OUTLOOK"
@ 6, 23 SAY "ITEM: "
@ 6, 29 GET PADDDTYPE
CLEAR GETS

@ 8, 18 SAY "ENTER FIRST YEAR (89 thru 94) or [Q]uit:";
GET ILIYEAR PICTURE "@! XX"
READ
MYEAR = VAL(ILIYEAR)
IF ILIYEAR = "Q" .OR. ILIYEAR = " Q"
    CLEAR
    VChoice = " "
    RETURN
ENDIF
IF MYEAR < 89 .OR. MYEAR > 94
    DO WRONGKEY
    LOOP
ENDIF
STARTYR = MYEAR
HOR = 35

@ 0,0 CLEAR
@ 8,16 SAY "PLEASE STAND BY WHILE PROGRAM SEARCHES FOR: "
    @ 11, 17 SAY REPLICATE (" ",33) + " "
    @ 12, 17 SAY REPLICATE (" ",33)
    @ 13, 17 SAY REPLICATE (" ",33)
    @ 12, 51 SAY " "
    @ 13, 50 SAY " "
    @ 14, 20 SAY "O O"
    @ 14, 45 SAY "O O O"
@ 12,19 GET PADDDTYPE
CLEAR GETS

YR = MYEAR
STOP = MYEAR + 4

COUNTER = 1
YEAR = 89

DO WHILE COUNTER <= 12

    DO CASE

        CASE COUNTER = 1
            NAME = "MAUTH"
            FLD = 'AUTH'

```

```

CASE COUNTER = 2
  NAME = "MAOH"
  FLD = 'AOH'
CASE COUNTER = 3
  NAME = "MTOTC"
  FLD = 'TOTC'
CASE COUNTER = 4
  NAME = "MMRC"
  FLD = 'MRC'
CASE COUNTER = 5
  NAME = "MCFR"
  FLD = 'CFR'
CASE COUNTER = 6
  NAME = "MPDO"
  FLD = 'PDO'
CASE COUNTER = 7
  NAME = "MPDR"
  FLD = 'PDR'
CASE COUNTER = 8
  NAME = "MTOTD"
  FLD = 'TOTD'
CASE COUNTER = 9
  NAME = "MRAMR"
  FLD = 'RAMR'
CASE COUNTER = 10
  NAME = "MOS"
  FLD = 'OS'
CASE COUNTER = 11
  NAME = "MNASS"
  FLD = 'NASS'
CASE COUNTER = 12
  NAME = "MTOTI"
  FLD = 'TOTI'
ENDCASE

DO WHILE YEAR <= STOP
  MVAR = "&NAME" + STR(YEAR,2,0)
  MFLD = "&FLD" + STR(YEAR,2,0)
  &MVAR = &MFLD
  YEAR = YEAR + 1
ENDDO (Year <= 98)

CNT = LTRIM(STR(COUNTER)) &&**** Count-Down Counter ****
@ 16,40 GET CNT
@ 16,24 SAY " ALL DONE WHEN: "
CLEAR GETS
@ 16,42 SAY " = 12! "
COUNTER = COUNTER + 1
YEAR = 89
ENDDO (Counter <=12 )

```

CLEAR
MYEAR = STARTYR

DO WHILE .T. &&***** Narrative Loop re-enters here
***** after PgUp following memo edit

***** Write chart variable labels along left margin *****

@ 2, 0 SAY "PART I: CURRENT STATUS "
@ 3, 0 SAY "A. AUTHORIZATIONS"
@ 4, 0 SAY "B. ASSETS ON HAND"
@ 5, 0 SAY "C. DELTA (+/-)"
@ 7, 0 SAY "PART II: DEPOT "
@ 8, 0 SAY "A. MEETS REPLACEMENT CRITERIA"
@ 9, 0 SAY "B. CONSIDER FOR RETIREMENT"
@ 10, 0 SAY "C. PLANNED DEPOT OVERHAUL"
@ 11, 0 SAY "D. PLANNED DEPOT REMANUFACTURE"
@ 12, 0 SAY "E. TOTAL DEPOT"
@ 13, 0 SAY "F. REMAINING ASSETS MEETING"
@ 14, 0 SAY "REPLACEMENT CRITERIA"
@ 16, 0 SAY "PART III: INTEGRATION "
@ 17, 0 SAY "A. AUTHORIZATIONS"
@ 18, 0 SAY "B. OVERAGE / SHORTAGE"
@ 19, 0 SAY "C. NEW ASSETS (PROJECTED BUY)"
@ 20, 0 SAY "D. DEPOT REBUILD"
@ 21, 0 SAY "E. DELTA (+/-)"

@ 0,0 SAY "ITEM:"
@ 0,5 GET PADDTYPE
@ 0,35 SAY "NSN:"
@ 0,39 GET PADDNSN
@ 0,59 SAY "LIFE EXPECTANCY:"
@ 0,75 GET PADDLIFE
CLEAR GETS

***** Display fiscal years across top of charts *****

@ 2,36 SAY "FY" + STR(MYEAR,2,0)
@ 2,45 SAY "FY" + STR(MYEAR+1,2,0)
@ 2,54 SAY "FY" + STR(MYEAR+2,2,0)
@ 2,63 SAY "FY" + STR(MYEAR+3,2,0)
@ 2,72 SAY "FY" + STR(MYEAR+4,2,0)

***** Paint Screen with values stored in &Variables *****

YR = MYEAR
STOP = MYEAR + 5

DO WHILE YR < STOP

```
AUTH = "MAUTH" + STR(YR,2,0)
@ 3,HOR SAY &AUTH PICTURE "99999"
AOH = "MAOH" + STR(YR,2,0)
@ 4,HOR SAY &AOH PICTURE "99999"
TOTC = "MTOTC" + STR(YR,2,0)
@ 5,HOR SAY &TOTC PICTURE "99999"
MRC = "MMRC" + STR(YR,2,0)
@ 8,HOR SAY &MRC PICTURE "99999"
CFR = "MCFR" + STR(YR,2,0)
@ 9,HOR SAY &CFR PICTURE "99999"
PDO = "MPDO" + STR(YR,2,0)
@ 10,HOR SAY &PDO PICTURE "99999"
PDR = "MPDR" + STR(YR,2,0)
@ 11,HOR SAY &PDR PICTURE "99999"
TOTD = "MTOTD" + STR(YR,2,0)
@ 12,HOR SAY &TOTD PICTURE "99999"
RAMR = "MRAMR" + STR(YR,2,0)
@ 14,HOR SAY &RAMR PICTURE "99999"
@ 17,HOR SAY &AUTH PICTURE "99999"
OS = "MOS" + STR(YR,2,0)
@ 18,HOR SAY &OS PICTURE "99999"
NASS = "MNASS" + STR(YR,2,0)
@ 19,HOR SAY &NASS PICTURE "99999"
@ 20,HOR SAY &TOTD PICTURE "99999"
TOTI = "MTOTI" + STR(YR,2,0)
@ 21,HOR SAY &TOTI PICTURE "99999"
```

```
YR = YR + 1
MYEAR = MYEAR + 1
HOR = HOR + 9
```

```
AUTH = "MAUTH" + STR(MYEAR,2,0)
AOH = "MAOH" + STR(MYEAR,2,0)
TOTC = "MTOTC" + STR(MYEAR,2,0)
MRC = "MMRC" + STR(MYEAR,2,0)
CFR = "MCFR" + STR(MYEAR,2,0)
PDO = "MPDO" + STR(MYEAR,2,0)
PDR = "MPDR" + STR(MYEAR,2,0)
TOTD = "MTOTD" + STR(MYEAR,2,0)
RAMR = "MRAMR" + STR(MYEAR,2,0)
OS = "MOS" + STR(MYEAR,2,0)
NASS = "MNASS" + STR(MYEAR,2,0)
TOTI = "MTOTI" + STR(MYEAR,2,0)
```

ENDDO (YR)

***** END SCREEN PAINT *****

MODYR = STARTYR

Choice = " "
DO WHILE MODYR # 0

KChoice = " "
@ 22,0 CLEAR
Ret = CHR(17)+CHR(196)+CHR(217)
@ 23,1 SAY "PgUp=Previous Menu [P]rint [U]pdate FY";
+LTRIM(STR(STARTYR))+ "-" + LTRIM(STR(STARTYR+4)) + " [Q]uit
@ 23,57 SAY "PgDn=Narratives/Notes"
@ 24,10 SAY " Select PgUp or PgDn keys else P, U, or Q"
@ 24,51 SAY " followed by &Ret:";
GET KChoice PICTURE "@! X"

READ

DO CASE &&***** Select Print, Update, Quit *****

CASE KChoice = "P"

SET COLOR TO W+/R,W+/R,B

@ 22,0 SAY REPLICATE(" ",80)

@ 23,0 SAY REPLICATE(" ",80)

@ 24,0 SAY REPLICATE(" ",80)

YNPRINT = " "

@ 24,17 SAY "[Y]es to PRINT * [N]o to Return to

@ 24,52 SAY "Profiles Screen"

@ 23, 9 SAY "DO YOU WISH TO PRINT A REPORT FOR THE"

@ 23,47 SAY "VEHICLE SHOWN ABOVE? (Y/N)";

GET YNPRINT PICTURE "Y"

READ

SET COLOR TO GR+/B,W+/R,B

IF YNPRINT = "N"

LOOP

ELSE && GO AHEAD AND PRINT

DOALL = "N" && SET UP VARIABLES

REPYEAR = STARTYR && NEEDED BY VPRNRPT.PRG

PADNSN = NSN && PROGRAM TO PRINT

CLEAR

@ 10,0 TO 14,79 DOUBLE

STANDBY = "* Please Stand By for the +";

TRIM("&PADDTYPE") + " Printed Report "

DO CENTER WITH 12, 80, STANDBY

@ 23,23 SAY "(Make Sure Printer is 'ON-LINE')"

DO VPRNRPT

ENDIF (YNPRINT)

```

CLEAR
CHOICE = " "
RETURN &&*****RETURN TO VEH TYPES SCREEN*****

CASE KChoice = "U" &&***** Update *****

    YRMOD = 1
DO WHILE .NOT. YRMOD < 1
    @ 23,0 SAY REPLICATE (" ",80)
    @ 24,0 SAY REPLICATE (" ",80)
    @ 23,22 SAY "WHICH YEAR DO YOU WISH TO UPDATE?"
    @ 24,22 SAY "(CHOICES: "+LTRIM(STR(STARTYR))+", "+;
    LTRIM(STR(STARTYR+1))+", "+LTRIM(STR(STARTYR+2))+;
    "+LTRIM(STR(STARTYR+3))+;
    @ 24,46 SAY " or "+LTRIM(STR(STARTYR+4))+ &RET)";
    GET MODYR PICTURE "@Z 99" && RANGE STARTYR,(YR-1)
    READ

    IF MODYR < STARTYR .OR. MODYR > (STARTYR+4)
        DO WRONGKEY
        LOOP
    ENDIF
    YRMOD = 0
ENDDO (YRMOD < 1)

    * Highlight one of six columns based on MODYR

DO CASE

CASE MODYR = STARTYR
    HOR = 35
CASE MODYR = STARTYR+1
    HOR = 44
CASE MODYR = STARTYR+2
    HOR = 53
CASE MODYR = STARTYR+3
    HOR = 62
CASE MODYR = STARTYR+4
    HOR = 71
ENDCASE

MYEAR = MODYR

AUTH = "MAUTH" + STR(MYEAR,2,0)
AOH = "MAOH" + STR(MYEAR,2,0)
TOTC = "MTOTC" + STR(MYEAR,2,0)
MRC = "MMRC" + STR(MYEAR,2,0)
CFR = "MCFR" + STR(MYEAR,2,0)
PDO = "MPDO" + STR(MYEAR,2,0)
PDR = "MPDR" + STR(MYEAR,2,0)
TOTD = "MTOTD" + STR(MYEAR,2,0)

```

```

RAMR = "MRAMR" + STR(MYEAR,2,0)
OS   = "MOS"   + STR(MYEAR,2,0)
NASS = "MNASS" + STR(MYEAR,2,0)
TOTI = "MTOTI" + STR(MYEAR,2,0)

```

***** CALCULATIONS *****

* Highlight selected variables to allow user updates

```

@ 3,HOR GET &AUTH PICTURE "99999"
@ 4,HOR GET &AOH  PICTURE "99999"
READ

```

```

&TOTC = &AOH-&AUTH

```

```

@ 5,HOR SAY &TOTC PICTURE "99999"
@ 8,HOR GET &MRC  PICTURE "99999"
READ

```

```

      IF &TOTC >= 0 .AND. &TOTC < &AUTH
          &CFR = &TOTC
      ELSE
          &CFR = 0
      ENDIF

```

```

@ 9,HOR SAY &CFR  PICTURE "99999"
@ 10,HOR GET &PDO  PICTURE "99999"
@ 11,HOR GET &PDR  PICTURE "99999"
READ

```

```

&TODD = &PDO + &PDR

```

```

@ 12,HOR SAY &TODD PICTURE "99999"

```

```

&RAMR = &MRC - (&CFR + &TODD)

```

```

      IF &RAMR < 0
          &RAMR = 0
      ENDIF

```

```

@ 14,HOR SAY &RAMR PICTURE "99999"
@ 17,HOR SAY &AUTH PICTURE "99999"
@ 18,HOR GET &OS   PICTURE "99999"
@ 19,HOR GET &NASS PICTURE "99999"
READ
@ 20,HOR SAY &TODD PICTURE "99999"

```

```

&TOTI = &OS + &NASS

```

```

@ 21,HOR SAY &TOTI PICTURE "99999"

```

```

@ 23,0 SAY REPLICATE (" ",80)

```

```

@ 24.0 SAY REPLICATE (" ",80)
***** Start Update Loop *****

COUNTER = 1
YEAR = MODYR  && UPDATE ONLY THE VARIABLES MODIFIED
DO WHILE COUNTER <= 12

    DO CASE

        CASE COUNTER = 1
            NAME = "MAUTH"
            FLD = 'AUTH'
        CASE COUNTER = 2
            NAME = "MAOH"
            FLD = 'AOH'
        CASE COUNTER = 3
            NAME = "TOTC"
            FLD = 'TOTC'
        CASE COUNTER = 4
            NAME = "MMRC"
            FLD = 'MRC'
        CASE COUNTER = 5
            NAME = "MCFR"
            FLD = 'CFR'
        CASE COUNTER = 6
            NAME = "MPDC"
            FLD = 'PDO'
        CASE COUNTER = 7
            NAME = "MPDR"
            FLD = 'PDR'
        CASE COUNTER = 8
            NAME = "MIOTD"
            FLD = 'TOTD'
        CASE COUNTER = 9
            NAME = "MRAMR"
            FLD = 'RAMR'
        CASE COUNTER = 10
            NAME = "MOS"
            FLD = 'OS'
        CASE COUNTER = 11
            NAME = "MNASS"
            FLD = 'NASS'
        CASE COUNTER = 12
            NAME = "MTOTI"
            FLD = 'TOTI'

    ENDCASE

    MVAR = "&NAME" + STR(MODYR,2,0)  && MODYR CHANGED
    MFLD = "&FLD" + STR(MODYR,2,0)

    REPLACE &MFLD WITH &MVAR

```

```

CNT = LTRIM(STR(COUNTER))
@ 23,42 GET CNT
CLEAR GETS
@ 23,28 SAY "ALL DONE WHEN "
@ 23,45 SAY "= 12!"

```

```

COUNTER = COUNTER + 1

```

```

ENDDO

```

```

***** Finish Update Loop *****

```

```

AUTH = &AUTH
AOH = &AOH
TOTC = &TOTC
MRC = &MRC
CFR = &CFR
PDO = &PDO
PDR = &PDR
TOTD = &TOTD
RAMR = &RAMR
OS = &OS
NASS = &NASS
TOTI = &TOTI
@ 23,0 SAY REPLICATE (" ",80)
@ 24,0 SAY REPLICATE (" ",80)

```

```

***** COMPLETE UPDATES *****

```

```

CASE READKEY() = 7 &&***** Narratives/Notes PgDn *****
SET SCOREBOARD ON
SET MENU OFF
SET FORMAT TO VMEMO && USE VMEMO.FMT SCREEN FORMAT
EDIT RECORD MTYPE
SET FORMAT TO
YR = STARTYR && RESET VARIABLES GOING BACK THROUGH
MYEAR = YR && SCREEN PAINT LOOP
MODYR = 0
HOR = 35
CLEAR && CLEAR CONTRACT DATA OFF SCREEN
SET SCOREBOARD OFF
CASE READKEY() = 6 &&***** Previous menu if PgUp *****
CLEAR
VChoice = " "
NChoice = " "
RETURN && EXIT && RETURN TO VEHICLE TYPES MENU

```

```
CASE KChoice = "Q" &&  
  CLEAR ALL  
  VChoice = " "  
  RETURN TO MASTER  
  MODYR = 0
```

```
  OTHERWISE  
    DO WRONGKEY  
  ENDCASE (READKEY)  
ENDDO (modyr)  
ENDDO (.T.)  
ENDDO (EOF)  
RETURN  
* EOF VPROFILE.PRG
```

```
* Program...: VREPORT.PRG  
* Author...: 1LT HANS GARCIA  
* Date.....: 08/15/89  
* Notice...: Copyright (c) 1989, 1LT HANS GARCIA  
* All Rights Reserved  
* CALLED FROM VMP.PRG  
*
```

```
SET BELL OFF  
SET CONFIRM ON  
SET CONSOLE ON  
SET ESCAPE OFF  
SET SAFETY OFF  
SET STATUS OFF  
SET TALK OFF  
ON ERROR DO ErrTrap  
REPTYPE = " "  
PADNSN = " "  
DONE = .F.  
STANDBY = "PLEASE STAND BY..."  
DO CENTER WITH 12, 80, STANDBY  
USE VEHICLES INDEX NSN, FAMILY  
REINDEX  
CLOSE DATA  
DO WHILE .NOT. DONE  
  CLEAR  
  USE VEHICLES INDEX NSN, FAMILY  
  Ret = CHR(17)+CHR(196)+CHR(217)  
  CLEAR  
  RC = RECCOUNT()  
  TRIMRC = LTRIM(STR(RC))
```

```
TEXT
```

REPORTS MENU

1. 463L FAMILY
2. A/C TOWING FAMILY
3. REFUELING FAMILY
4. CRASH / FIRE FAMILY
5. SNOW REMOVAL FAMILY
6. FULL REPORT (VEHICLES)
7. INDIVIDUAL VEHICLE TYPE

8. QUICK LIST (Types & NSNs)

[Q]uit to MAIN MENU

```

ENDTEXT
@ 12,42 GET TRIMRC
CLEAR GETS
@ 14,21 SAY "- - - - -"
REPNUM = " "
@ 3,19 TO 19,60 DOUBLE
@ 5,20 TO 5,59 DOUBLE
DO WHILE .NOT. UPPER(REPNUM)$"12345678Q"
@ 19, 34 SAY " SELECT "
@ 19, 42 GET REPNUM PICTURE "@! X"
READ
IF .NOT. UPPER(REPNUM)$"12345678Q"
DO WRONGKEY
ENDIF
ENDDO (REPNUM # 12345678Q)

IF REPNUM = "Q"
CLEAR ALL
RETURN TO MASTER
ENDIF

QUIKLIST = 'N'

DO CASE
CASE REPNUM = "1"
DOALL = "N"
REPTYPE = "L"
FAM = "463L FAMILY "
CASE REPNUM = "2"
DOALL = "N"
REPTYPE = "T"
FAM = "A/C TOWING FAMILY "
CASE REPNUM = "3"
DOALL = "N"
REPTYPE = "R"
FAM = "REFUELING FAMILY "

```



```

CASE REPNUM = "4"
  DOALL = "N"
  REPTYPE = "C"
  FAM = "CRASH / FIRE FAMILY "
CASE REPNUM = "5"
  DOALL = "N"
  REPTYPE = "S"
  FAM = "SNOW REMOVAL FAMILY "
CASE REPNUM = "6"
  DOALL = "Y"
  FAM = "GRAND TOTAL "
CASE REPNUM = "7"
  CLEAR
  DOALL = "N"
  TRYAGAIN = " "
  PADNSN = " "
  MTYPE = " "
  DO MANUAL      && GO OUT AND FIND PADNSN
    IF TRYAGAIN = "N"
      CLOSE DATABASES
      CLEAR ALL
      LOOP
    ENDIF
    FAM = "NSN# &PADNSN "
CASE REPNUM = "8"
  QUIKLIST = "Y"
  FAM = "QUICK LIST "
ENDCASE

CLEAR
DO CENTER WITH 10, 80, FAM
@ 8,26 TO 12,53 DOUBLE

IF REPNUM # "8"
  REPYEAR = 89
  @14,17 SAY "ENTER FIRST YEAR OF 5-YEAR OUTLOOK (89-94):";
  GET REPYEAR PICTURE "99" RANGE 89,94
  READ
ENDIF (REPNUM #8)

***** P, S, or Q *****
OUTDEV = " "
DO WHILE .NOT. UPPER(OUTDEV)$"PQS"
@ 14, 0 CLEAR
@ 14,30 SAY "ENTER DESIRED OUTPUT"
@ 15,17 SAY "[P]rinter, [S]creen or [Q]uit to MAIN MENU:";
  GET OUTDEV PICTURE "@! X"
  READ

```

```

IF .NOT. UPPER(OUTDEV)$"PQS"
    DO WRONGKEY
ENDIF
ENDDO (OUTDEV PQS)

DO CASE
CASE UPPER(OUTDEV) = "S" &&***** ON-SCREEN *****
    CLEAR
    @ 7, 18 to 17, 61 DOUBLE
    @ 9, 30 SAY "* ON-SCREEN REPORTS *"
    @ 11, 22 SAY "TO STOP SCROLLING, PRESS"
    @ 11, 48 SAY "Ctrl + S ."
    @ 10, 47 TO 12, 52
    @ 10, 54 TO 12, 56
    @ 13, 24 SAY "TO RESUME SCROLLING, PRESS &RET ."
    @ 15, 24 SAY "        PRESS &RET TO BEGIN!"
    WAIT ""

IF REPNUM # "8"
    DO VSCRIPT      && ON-SCREEN REPORT PROGRAM
ELSE
    USE VEHICLES INDEX FAMILY
    CLEAR
    REPORT FORM VQUICK
    CLOSE DATABASES
    ?" "
    ?" "
    ?" "
    ?" "
ENDIF

@ 22,0 CLEAR
SET COLOR TO W+/R,W+/R,B
@ 22,0 SAY REPLICATE(" ",80)
@ 23,0 SAY REPLICATE(" ",80)
@ 24,0 SAY REPLICATE(" ",80)
@ 22,0 TO 24,79 DOUBLE
STANDBY = "THAT'S ALL THE "+;
TRIM("&FAM") +" REPORTS * &Ret TO CONTINUE"
DO CENTER WITH 23, 80, STANDBY
??CHR(7)
WAIT ""
SET COLOR TO GR+/B,W+/R,B
CLEAR ALL      && CLEAR MEMORY VARIABLES &
LOOP           && RETURN TO UTILITIES MENU

CASE UPPER(OUTDEV) = "Q"
    CLOSE DATABASES
    RETURN

```

```

CASE UPPER(OUTDEV) = "P" &&***** PRINTED REPORT ***
  YNPRINT = "Y"
  CLEAR
  @ 10,9 to 16,71 DOUBLE
  @ 14,16 SAY "[Y]es to PRINT *"
  @ 14,33 SAY "[N]o to Return to Reports Menu"
  @ 23,23 SAY "(Make Sure Printer is 'ON-LINE')"
```

MPRINT = "Ready to PRINT the "+;

TRIM("&FAM") + " Report (Y/N)?"

DO CENTER WITH 12, 80, MPRINT

@ 14,64 GET YNPRINT PICTURE "Y"

READ

IF YNPRINT = "N"

 CLOSE DATABASES

 LOOP

ELSE

 CLEAR

 @ 10,4 TO 14,76 DOUBLE

 STANDBY = "* Please Stand By for the "+;

 TRIM("&FAM") + " Printed Report *"

 DO CENTER WITH 12, 60, STANDBY

ENDIF (YNPRINT)

ENDCASE (UPPER-OUTDEV)

IF REPNUM # "8"

 DO VPRNRPT

ELSE

 USE VEHICLES INDEX FAMILY

 SET CONSOLE OFF

 SET PRINT ON

 REPORT FORM VQUICK

 SET PRINT OFF

 SET CONSOLE ON

 CLOSE DATABASE

ENDIF

* RESET QUERY VALUES

PADNSN = " "

CLOSE DATABASES

ENDDO (NOT DONE)

RETURN

* EOF VREPORT.PRG

```

* Program...: VPRNRPT.PRG
* Author...: 1LT HANS GARCIA
* Date.....: 08/15/89
* Notice...: Copyright (c) 1989, 1LT HANS GARCIA
* All Rights Reserved
* CALLED FROM VREPORT.PRG
* Notes: This program produces the printed report for
*       the vehicle(s) selected by the user from the
*       Reports Menu.
*

```

```

USE VEHICLES INDEX NSN
GO TOP
SET COLOR TO GR+/B,W+/R,B
SET MARGIN TO 8
SET MEMOWIDTH TO 68

```

```

STORE 8 TO MLINE
STORE 1 TO MPAGE

```

```

IF DOALL = "N"
    LOCATE FOR FAMILY = "&REPTYPE" .OR. NSN = "&PADNSN"
ENDIF
DO WHILE .NOT. EOF()
SET DEVICE TO PRINT

```

```

* PRINT PROFILE
@ MLINE      , 0 SAY TYPE
@ MLINE      , 29 SAY "NSN:"
@ MLINE      , 33 SAY NSN
@ MLINE      , 53 SAY "Life Exp= "
@ MLINE      , 63 SAY LIFE
@ MLINE      , 65 SAY " Yrs"

```

```

***** PART I *****
@ MLINE + 2, 0 SAY "PART I: CURRENT STATUS"
@ MLINE + 2, 33 SAY "FY" + LTRIM(STR(REPYEAR))
@ MLINE + 2, 41 SAY "FY" + LTRIM(STR(REPYEAR+1))
@ MLINE + 2, 49 SAY "FY" + LTRIM(STR(REPYEAR+2))
@ MLINE + 2, 57 SAY "FY" + LTRIM(STR(REPYEAR+3))
@ MLINE + 2, 65 SAY "FY" + LTRIM(STR(REPYEAR+4))
@ MLINE + 4, 0 SAY "A. AUTHORIZATIONS"
MAUTH = ('AUTH' + LTRIM(STR(REPYEAR)))
@ MLINE + 4, 32 SAY &MAUTH
MAUTH = ('AUTH' + LTRIM(STR(REPYEAR+1)))
@ MLINE + 4, 40 SAY &MAUTH
MAUTH = ('AUTH' + LTRIM(STR(REPYEAR+2)))
@ MLINE + 4, 48 SAY &MAUTH
MAUTH = ('AUTH' + LTRIM(STR(REPYEAR+3)))
@ MLINE + 4, 56 SAY &MAUTH
MAUTH = ('AUTH' + LTRIM(STR(REPYEAR+4)))
@ MLINE + 4, 64 SAY &MAUTH

```

```

@ MLINE + 6, 0 SAY "B. ASSETS ON HAND"
MAOH = ('AOH' + LTRIM(STR(REPYEAR)))
@ MLINE + 6, 32 SAY &MAOH
MAOH = ('AOH' + LTRIM(STR(REPYEAR+1)))
@ MLINE + 6, 40 SAY &MAOH
MAOH = ('AOH' + LTRIM(STR(REPYEAR+2)))
@ MLINE + 6, 48 SAY &MAOH
MAOH = ('AOH' + LTRIM(STR(REPYEAR+3)))
@ MLINE + 6, 56 SAY &MAOH
MAOH = ('AOH' + LTRIM(STR(REPYEAR+4)))
@ MLINE + 6, 64 SAY &MAOH

```

```

@ MLINE + 8, 0 SAY "C. DELTA"
MTOTC = ('TOTC' + LTRIM(STR(REPYEAR)))
@ MLINE + 8, 32 SAY &MTOTC
MTOTC = ('TOTC' + LTRIM(STR(REPYEAR+1)))
@ MLINE + 8, 40 SAY &MTOTC
MTOTC = ('TOTC' + LTRIM(STR(REPYEAR+2)))
@ MLINE + 8, 48 SAY &MTOTC
MTOTC = ('TOTC' + LTRIM(STR(REPYEAR+3)))
@ MLINE + 8, 56 SAY &MTOTC
MTOTC = ('TOTC' + LTRIM(STR(REPYEAR+4)))
@ MLINE + 8, 64 SAY &MTOTC

```

***** PART II *****

```

@ MLINE + 10, 0 SAY "PART II: DEPOT"
@ MLINE + 10, 16 SAY REPLICATE ("-", 53)
@ MLINE + 12, 0 SAY "A. MEETS REPLACEMENT CRITERIA"
MMRC = ('MRC' + LTRIM(STR(REPYEAR)))
@ MLINE + 12, 32 SAY &MMRC
MMRC = ('MRC' + LTRIM(STR(REPYEAR+1)))
@ MLINE + 12, 40 SAY &MMRC
MMRC = ('MRC' + LTRIM(STR(REPYEAR+2)))
@ MLINE + 12, 48 SAY &MMRC
MMRC = ('MRC' + LTRIM(STR(REPYEAR+3)))
@ MLINE + 12, 56 SAY &MMRC
MMRC = ('MRC' + LTRIM(STR(REPYEAR+4)))
@ MLINE + 12, 64 SAY &MMRC

```

```

@ MLINE + 14, 0 SAY "B. CONSIDER FOR RETIREMENT"
MCFR = ('CFR' + LTRIM(STR(REPYEAR)))
@ MLINE + 14, 32 SAY &MCFR
MCFR = ('CFR' + LTRIM(STR(REPYEAR+1)))
@ MLINE + 14, 40 SAY &MCFR
MCFR = ('CFR' + LTRIM(STR(REPYEAR+2)))
@ MLINE + 14, 48 SAY &MCFR
MCFR = ('CFR' + LTRIM(STR(REPYEAR+3)))
@ MLINE + 14, 56 SAY &MCFR
MCFR = ('CFR' + LTRIM(STR(REPYEAR+4)))
@ MLINE + 14, 64 SAY &MCFR

```

```

@ MLINE + 16, 0 SAY "C. PLANNED DEPOT OVERHAUL"
MPDO = ('PDO' + LTRIM(STR(REPYEAR)))
@ MLINE + 16, 32 SAY &MPDO
MPDO = ('PDO' + LTRIM(STR(REPYEAR+1)))
@ MLINE + 16, 40 SAY &MPDO
MPDO = ('PDO' + LTRIM(STR(REPYEAR+2)))
@ MLINE + 16, 48 SAY &MPDO
MPDO = ('PDO' + LTRIM(STR(REPYEAR+3)))
@ MLINE + 16, 56 SAY &MPDO
MPDO = ('PDO' + LTRIM(STR(REPYEAR+4)))
@ MLINE + 16, 64 SAY &MPDO

@ MLINE + 18, 0 SAY "D. PLANNED DEPOT REMANUFACTURE"
MPDR = ('PDR' + LTRIM(STR(REPYEAR)))
@ MLINE + 18, 32 SAY &MPDR
MPDR = ('PDR' + LTRIM(STR(REPYEAR+1)))
@ MLINE + 18, 40 SAY &MPDR
MPDR = ('PDR' + LTRIM(STR(REPYEAR+2)))
@ MLINE + 18, 48 SAY &MPDR
MPDR = ('PDR' + LTRIM(STR(REPYEAR+3)))
@ MLINE + 18, 56 SAY &MPDR
MPDR = ('PDR' + LTRIM(STR(REPYEAR+4)))
@ MLINE + 18, 64 SAY &MPDR

@ MLINE + 20, 0 SAY "E. TOTAL DEPOT (C&D)"
MTOTD = ('TOTD' + LTRIM(STR(REPYEAR)))
@ MLINE + 20, 32 SAY &MTOTD
MTOTD = ('TOTD' + LTRIM(STR(REPYEAR+1)))
@ MLINE + 20, 40 SAY &MTOTD
MTOTD = ('TOTD' + LTRIM(STR(REPYEAR+2)))
@ MLINE + 20, 48 SAY &MTOTD
MTOTD = ('TOTD' + LTRIM(STR(REPYEAR+3)))
@ MLINE + 20, 56 SAY &MTOTD
MTOTD = ('TOTD' + LTRIM(STR(REPYEAR+4)))
@ MLINE + 20, 64 SAY &MTOTD

@ MLINE + 22, 0 SAY "F. REMAINING ASSETS MEETING"
@ MLINE + 23, 0 SAY "REPLACEMENT CRITERIA"
MRAMR = ('RAMR' + LTRIM(STR(REPYEAR)))
@ MLINE + 23, 32 SAY &MRAMR
MRAMR = ('RAMR' + LTRIM(STR(REPYEAR+1)))
@ MLINE + 23, 40 SAY &MRAMR
MRAMR = ('RAMR' + LTRIM(STR(REPYEAR+2)))
@ MLINE + 23, 48 SAY &MRAMR
MRAMR = ('RAMR' + LTRIM(STR(REPYEAR+3)))
@ MLINE + 23, 56 SAY &MRAMR
MRAMR = ('RAMR' + LTRIM(STR(REPYEAR+4)))
@ MLINE + 23, 64 SAY &MRAMR

```

***** PART III *****

```

@ MLINE + 25, 0 SAY "PART III: INTEGRATION"
@ MLINE + 25, 23 SAY REPLICATE("-", 46)
@ MLINE + 27, 0 SAY "A. AUTHORIZATIONS"
MAUTH = ('AUTH' + LTRIM(STR(REPYEAR)))
@ MLINE + 27, 32 SAY &MAUTH
MAUTH = ('AUTH' + LTRIM(STR(REPYEAR+1)))
@ MLINE + 27, 40 SAY &MAUTH
MAUTH = ('AUTH' + LTRIM(STR(REPYEAR+2)))
@ MLINE + 27, 48 SAY &MAUTH
MAUTH = ('AUTH' + LTRIM(STR(REPYEAR+3)))
@ MLINE + 27, 56 SAY &MAUTH
MAUTH = ('AUTH' + LTRIM(STR(REPYEAR+4)))
@ MLINE + 27, 64 SAY &MAUTH

@ MLINE + 29, 0 SAY "B. OVERAGE/SHORTAGE"
MOS = ('OS' + LTRIM(STR(REPYEAR)))
@ MLINE + 29, 32 SAY &MOS
MOS = ('OS' + LTRIM(STR(REPYEAR+1)))
@ MLINE + 29, 40 SAY &MOS
MOS = ('OS' + LTRIM(STR(REPYEAR+2)))
@ MLINE + 29, 48 SAY &MOS
MOS = ('OS' + LTRIM(STR(REPYEAR+3)))
@ MLINE + 29, 56 SAY &MOS
MOS = ('OS' + LTRIM(STR(REPYEAR+4)))
@ MLINE + 29, 64 SAY &MOS

@ MLINE + 31, 0 SAY "C. NEW ASSETS (PROJECTED BUY)"
MNASS = ('NASS' + LTRIM(STR(REPYEAR)))
@ MLINE + 31, 32 SAY &MNASS
MNASS = ('NASS' + LTRIM(STR(REPYEAR+1)))
@ MLINE + 31, 40 SAY &MNASS
MNASS = ('NASS' + LTRIM(STR(REPYEAR+2)))
@ MLINE + 31, 48 SAY &MNASS
MNASS = ('NASS' + LTRIM(STR(REPYEAR+3)))
@ MLINE + 31, 56 SAY &MNASS
MNASS = ('NASS' + LTRIM(STR(REPYEAR+4)))
@ MLINE + 31, 64 SAY &MNASS

@ MLINE + 33, 0 SAY "D. DEPOT REBUILD"
MTOTD = ('TOTD' + LTRIM(STR(REPYEAR)))
@ MLINE + 33, 32 SAY &MTOTD
MTOTD = ('TOTD' + LTRIM(STR(REPYEAR+1)))
@ MLINE + 33, 40 SAY &MTOTD
MTOTD = ('TOTD' + LTRIM(STR(REPYEAR+2)))
@ MLINE + 33, 48 SAY &MTOTD
MTOTD = ('TOTD' + LTRIM(STR(REPYEAR+3)))
@ MLINE + 33, 56 SAY &MTOTD
MTOTD = ('TOTD' + LTRIM(STR(REPYEAR+4)))
@ MLINE + 33, 64 SAY &MTOTD

```

```

@ MLINE + 35, 0 SAY "E. DELTA"
MTOTI = ('TOTI' + LTRIM(STR(REPYEAR)))
@ MLINE + 35, 32 SAY &MTOTI
MTOTI = ('TOTI' + LTRIM(STR(REPYEAR+1)))
@ MLINE + 35, 40 SAY &MTOTI
MTOTI = ('TOTI' + LTRIM(STR(REPYEAR+2)))
@ MLINE + 35, 48 SAY &MTOTI
MTOTI = ('TOTI' + LTRIM(STR(REPYEAR+3)))
@ MLINE + 35, 56 SAY &MTOTI
MTOTI = ('TOTI' + LTRIM(STR(REPYEAR+4)))
@ MLINE + 35, 64 SAY &MTOTI

***** PART IV *****
@ MLINE + 37, 0 SAY "PART IV:  NARRATIVES/NOTES"
@ MLINE + 37, 27 SAY REPLICATE (" ", 42)

@ MLINE + 38, 0 SAY " "
MCONTR = "CONTRACT"
SET CONSOLE OFF
SET PRINT ON
DISPLAY &MCONTR OFF
SET PRINT OFF
SET CONSOLE ON
SET DEVICE TO SCREEN

EJECT && FORM FEED TO START AT TOP OF NEXT PAGE

    IF DOALL = "N"
        CONTINUE    && USED WITH LOCATE COMMAND
                    && TO SEARCH NEXT CASE
    ELSE
        SKIP
    ENDIF

ENDDO (NOT END-OF-FILE)
RETURN
* EOF VPRNRPT
-----

```



```

* Program...: VSCRPT.PRG
* Author....: 1LT HANS GARCIA
* Date.....: 08/15/89
* Notice....: Copyright (c) 1989, 1LT HANS GARCIA
* All Rights Reserved
* CALLED FROM VREPORT.PRG
* Notes: This program produces the on-screen report for
*       the vehicle(s) selected by the user from the
*       Reports Menu.
*

```

```

USE VEHICLES INDEX NSN
GO TOP
SET COLOR TO GR+/B.W+/R.B
ON ERROR DO ErrTrap
SET MEMOWIDTH TO 68

```

```

STORE 0 TO MLINE

```

```

IF DCALL = "N"
    LOCATE FOR FAMILY = "&REPTYPE" .OR. NSN = "&PADNSN"
ENDIF

```

```

DO WHILE .NOT. EOF()
CLEAR
SET DEVICE TO SCREEN

```

```

* DISPLAY PROFILE

```

```

@ MLINE      , 0 SAY TYPE
@ MLINE      , 29 SAY "NSN:"
@ MLINE      , 33 SAY NSN
@ MLINE      , 53 SAY "Life Exp= "
@ MLINE      , 63 SAY LIFE
@ MLINE      , 65 SAY " Yrs"

```

```

***** PART I *****

```

```

@ MLINE + 2, 0 SAY "PART I: CURRENT STATUS"
@ MLINE + 2, 33 SAY "FY" + LTRIM(STR(REPYEAR))
@ MLINE + 2, 41 SAY "FY" + LTRIM(STR(REPYEAR+1))
@ MLINE + 2, 49 SAY "FY" + LTRIM(STR(REPYEAR+2))
@ MLINE + 2, 57 SAY "FY" + LTRIM(STR(REPYEAR+3))
@ MLINE + 2, 65 SAY "FY" + LTRIM(STR(REPYEAR+4))
@ MLINE + 3, 0 SAY "A. AUTHORIZATIONS"
MAUTH = ('AUTH' + LTRIM(STR(REPYEAR)))
@ MLINE + 3, 32 SAY &MAUTH
MAUTH = ('AUTH' + LTRIM(STR(REPYEAR+1)))
@ MLINE + 3, 40 SAY &MAUTH
MAUTH = ('AUTH' + LTRIM(STR(REPYEAR+2)))
@ MLINE + 3, 48 SAY &MAUTH
MAUTH = ('AUTH' + LTRIM(STR(REPYEAR+3)))
@ MLINE + 3, 56 SAY &MAUTH
MAUTH = ('AUTH' + LTRIM(STR(REPYEAR+4)))

```

@ MLINE + 3, 64 SAY &MAUTH

@ MLINE + 4, 0 SAY "B. ASSETS ON HAND"
MAOH = ('AOH' + LTRIM(STR(REPYEAR)))

@ MLINE + 4, 32 SAY &MAOH
MAOH = ('AOH' + LTRIM(STR(REPYEAR+1)))

@ MLINE + 4, 40 SAY &MAOH
MAOH = ('AOH' + LTRIM(STR(REPYEAR+2)))

@ MLINE + 4, 48 SAY &MAOH
MAOH = ('AOH' + LTRIM(STR(REPYEAR+3)))

@ MLINE + 4, 56 SAY &MAOH
MAOH = ('AOH' + LTRIM(STR(REPYEAR+4)))

@ MLINE + 4, 64 SAY &MAOH

@ MLINE + 5, 0 SAY "C. DELTA"

MTOTC = ('TOTC' + LTRIM(STR(REPYEAR)))

@ MLINE + 5, 32 SAY &MTOTC

MTOTC = ('TOTC' + LTRIM(STR(REPYEAR+1)))

@ MLINE + 5, 40 SAY &MTOTC

MTOTC = ('TOTC' + LTRIM(STR(REPYEAR+2)))

@ MLINE + 5, 48 SAY &MTOTC

MTOTC = ('TOTC' + LTRIM(STR(REPYEAR+3)))

@ MLINE + 5, 56 SAY &MTOTC

MTOTC = ('TOTC' + LTRIM(STR(REPYEAR+4)))

@ MLINE + 5, 64 SAY &MTOTC

***** PART II *****

@ MLINE + 7, 0 SAY "PART II: DEPOT"

@ MLINE + 7, 16 SAY REPLICATE ("-", 53)

@ MLINE + 8, 0 SAY "A. MEETS REPLACEMENT CRITERIA"

MMRC = ('MRC' + LTRIM(STR(REPYEAR)))

@ MLINE + 8, 32 SAY &MMRC

MMRC = ('MRC' + LTRIM(STR(REPYEAR+1)))

@ MLINE + 8, 40 SAY &MMRC

MMRC = ('MRC' + LTRIM(STR(REPYEAR+2)))

@ MLINE + 8, 48 SAY &MMRC

MMRC = ('MRC' + LTRIM(STR(REPYEAR+3)))

@ MLINE + 8, 56 SAY &MMRC

MMRC = ('MRC' + LTRIM(STR(REPYEAR+4)))

@ MLINE + 8, 64 SAY &MMRC

@ MLINE + 9, 0 SAY "B. CONSIDER FOR RETIREMENT"

MCFR = ('CFR' + LTRIM(STR(REPYEAR)))

@ MLINE + 9, 32 SAY &MCFR

MCFR = ('CFR' + LTRIM(STR(REPYEAR+1)))

@ MLINE + 9, 40 SAY &MCFR

MCFR = ('CFR' + LTRIM(STR(REPYEAR+2)))

@ MLINE + 9, 48 SAY &MCFR

MCFR = ('CFR' + LTRIM(STR(REPYEAR+3)))

@ MLINE + 9, 56 SAY &MCFR

MCFR = ('CFR' + LTRIM(STR(REPYEAR+4)))

```

@ MLINE + 9, 64 SAY &MCFR

@ MLINE + 10, 0 SAY "C. PLANNED DEPOT OVERHAUL"
MPDO = ('PDO' + LTRIM(STR(REPYEAR)))
@ MLINE + 10, 32 SAY &MPDO
MPDO = ('PDO' + LTRIM(STR(REPYEAR+1)))
@ MLINE + 10, 40 SAY &MPDO
MPDO = ('PDO' + LTRIM(STR(REPYEAR+2)))
@ MLINE + 10, 48 SAY &MPDO
MPDO = ('PDO' + LTRIM(STR(REPYEAR+3)))
@ MLINE + 10, 56 SAY &MPDO
MPDO = ('PDO' + LTRIM(STR(REPYEAR+4)))
@ MLINE + 10, 64 SAY &MPDO

@ MLINE + 11, 0 SAY "D. PLANNED DEPOT REMANUFACTURE"
MPDR = ('PDR' + LTRIM(STR(REPYEAR)))
@ MLINE + 11, 32 SAY &MPDR
MPDR = ('PDR' + LTRIM(STR(REPYEAR+1)))
@ MLINE + 11, 40 SAY &MPDR
MPDR = ('PDR' + LTRIM(STR(REPYEAR+2)))
@ MLINE + 11, 48 SAY &MPDR
MPDR = ('PDR' + LTRIM(STR(REPYEAR+3)))
@ MLINE + 11, 56 SAY &MPDR
MPDR = ('PDR' + LTRIM(STR(REPYEAR+4)))
@ MLINE + 11, 64 SAY &MPDR

@ MLINE + 12, 0 SAY "E. TOTAL DEPOT (C&D)"
MTOTD = ('TOTD' + LTRIM(STR(REPYEAR)))
@ MLINE + 12, 32 SAY &MTOTD
MTOTD = ('TOTD' + LTRIM(STR(REPYEAR+1)))
@ MLINE + 12, 40 SAY &MTOTD
MTOTD = ('TOTD' + LTRIM(STR(REPYEAR+2)))
@ MLINE + 12, 48 SAY &MTOTD
MTOTD = ('TOTD' + LTRIM(STR(REPYEAR+3)))
@ MLINE + 12, 56 SAY &MTOTD
MTOTD = ('TOTD' + LTRIM(STR(REPYEAR+4)))
@ MLINE + 12, 64 SAY &MTOTD

@ MLINE + 13, 0 SAY "F. REMAINING ASSETS MEETING"
@ MLINE + 14, 0 SAY "REPLACEMENT CRITERIA"
MRAMR = ('RAMR' + LTRIM(STR(REPYEAR)))
@ MLINE + 14, 32 SAY &MRAMR
MRAMR = ('RAMR' + LTRIM(STR(REPYEAR+1)))
@ MLINE + 14, 40 SAY &MRAMR
MRAMR = ('RAMR' + LTRIM(STR(REPYEAR+2)))
@ MLINE + 14, 48 SAY &MRAMR
MRAMR = ('RAMR' + LTRIM(STR(REPYEAR+3)))
@ MLINE + 14, 56 SAY &MRAMR
MRAMR = ('RAMR' + LTRIM(STR(REPYEAR+4)))
@ MLINE + 14, 64 SAY &MRAMR

```

***** PART III *****

```

@ MLINE + 16, 0 SAY "PART III: INTEGRATION"
@ MLINE + 16, 23 SAY REPLICATE("-", 46)
@ MLINE + 17, 0 SAY "A. AUTHORIZATIONS"
MAUTH = ('AUTH' + LTRIM(STR(REPYEAR)))
@ MLINE + 17, 32 SAY &MAUTH
MAUTH = ('AUTH' + LTRIM(STR(REPYEAR+1)))
@ MLINE + 17, 40 SAY &MAUTH
MAUTH = ('AUTH' + LTRIM(STR(REPYEAR+2)))
@ MLINE + 17, 48 SAY &MAUTH
MAUTH = ('AUTH' + LTRIM(STR(REPYEAR+3)))
@ MLINE + 17, 56 SAY &MAUTH
MAUTH = ('AUTH' + LTRIM(STR(REPYEAR+4)))
@ MLINE + 17, 64 SAY &MAUTH

@ MLINE + 18, 0 SAY "B. OVERAGE/SHORTAGE"
MOS = ('OS' + LTRIM(STR(REPYEAR)))
@ MLINE + 18, 32 SAY &MOS
MOS = ('OS' + LTRIM(STR(REPYEAR+1)))
@ MLINE + 18, 40 SAY &MOS
MOS = ('OS' + LTRIM(STR(REPYEAR+2)))
@ MLINE + 18, 48 SAY &MOS
MOS = ('OS' + LTRIM(STR(REPYEAR+3)))
@ MLINE + 18, 56 SAY &MOS
MOS = ('OS' + LTRIM(STR(REPYEAR+4)))
@ MLINE + 18, 64 SAY &MOS

@ MLINE + 19, 0 SAY "C. NEW ASSETS (PROJECTED BUY)"
MNASS = ('NASS' + LTRIM(STR(REPYEAR)))
@ MLINE + 19, 32 SAY &MNASS
MNASS = ('NASS' + LTRIM(STR(REPYEAR+1)))
@ MLINE + 19, 40 SAY &MNASS
MNASS = ('NASS' + LTRIM(STR(REPYEAR+2)))
@ MLINE + 19, 48 SAY &MNASS
MNASS = ('NASS' + LTRIM(STR(REPYEAR+3)))
@ MLINE + 19, 56 SAY &MNASS
MNASS = ('NASS' + LTRIM(STR(REPYEAR+4)))
@ MLINE + 19, 64 SAY &MNASS

@ MLINE + 20, 0 SAY "D. DEPOT REBUILD"
MTOTD = ('TOTD' + LTRIM(STR(REPYEAR)))
@ MLINE + 20, 32 SAY &MTOTD
MTOTD = ('TOTD' + LTRIM(STR(REPYEAR+1)))
@ MLINE + 20, 40 SAY &MTOTD
MTOTD = ('TOTD' + LTRIM(STR(REPYEAR+2)))
@ MLINE + 20, 48 SAY &MTOTD
MTOTD = ('TOTD' + LTRIM(STR(REPYEAR+3)))
@ MLINE + 20, 56 SAY &MTOTD
MTOTD = ('TOTD' + LTRIM(STR(REPYEAR+4)))
@ MLINE + 20, 64 SAY &MTOTD

```

```

@ MLINE + 21, 0 SAY "E. DELTA"
MTOTI = ('TOTI' + LTRIM(STR(REPYEAR)))
@ MLINE + 21, 32 SAY &MTOTI
MTOTI = ('TOTI' + LTRIM(STR(REPYEAR+1)))
@ MLINE + 21, 40 SAY &MTOTI
MTOTI = ('TOTI' + LTRIM(STR(REPYEAR+2)))
@ MLINE + 21, 48 SAY &MTOTI
MTOTI = ('TOTI' + LTRIM(STR(REPYEAR+3)))
@ MLINE + 21, 56 SAY &MTOTI
MTOTI = ('TOTI' + LTRIM(STR(REPYEAR+4)))
@ MLINE + 21, 64 SAY &MTOTI

***** PART IV *****
@ MLINE + 23, 0 SAY "PART IV:  NARRATIVES/NOTES"
@ MLINE + 23, 27 SAY REPLICATE ("-", 42)

@ MLINE + 24, 0 SAY ""

MCONTR = "CONTRACT"
DISPLAY &MCONTR OFF
?" "
?" "
?" "
?" "
?" "
?" "
?" "
?" "
?" "
?" "
?" "
?" "
?" "
?" "
?" "

IF DOALL = "N"
    CONTINUE    && USED WITH LOCATE COMMAND
                * && TO SEARCH NEXT CASE
ELSE
    SKIP
ENDIF

ENDDO (NOT END-OF-FILE)

RETURN
* EOF SCRPT.PRG
-----

```

```

*****
* Program...: VMAINT.PRG
* Author....: 1LT HANS GARCIA
* Date.....: 08/15/89
* Notice....: Copyright (c) 1989, 1LT HANS GARCIA
* All Rights Reserved
* CALLED FROM VMP.PRG
* Notes: This program produces the Utilities Menu and
*        calls up the routines to add, edit, or delete
*        vehicles on file. It also calls up the Master
*        file update routine.
*

```

```

CLEAR
SET TALK OFF
SET BELL OFF
SET STATUS OFF
SET ESCAPE OFF
SET CONFIRM ON
SET COLOR TO GR+/B,W+/R,B
SET MEMOWIDTH TO 69

```

```

DO WHILE .T.

```

```

    CLEAR
    @ 3,19 TO 18,60 DOUBLE
    @ 4,22 SAY [A V M P   U T I L I T I E S   M E N U]
    @ 5,20 TO 5,59 DOUBLE
    @ 7,28 SAY [1. ADD VEHICLES TO FILE]
    @ 9,28 SAY [2. EDIT VEHICLES ON FILE]
    @ 11,28 SAY [3. DELETE VEHICLES ON FILE]
    @ 13,28 SAY [4. UPDATE MASTER FILE]
    @ 16,28 SAY '[Q]uit to MAIN MENU'
    STORE " " TO selectnum
    @ 18,34 SAY " SELECT      "
    @ 18,42 GET selectnum PICTURE "@! X"
    READ

```

```

DO CASE
    CASE selectnum = "Q"
        CLEAR ALL
        RETURN

    CASE selectnum = "1"
        * ADD INFORMATION
        CLEAR
        DO VMPADD

    CASE selectnum = "2"
        * EDIT INFORMATION
        CLEAR
        DO VMPEDIT

```

```

CASE selectnum = "3"
    * REMOVE INFORMATION
    CLEAR
    DO VMPDEL

CASE selectnum = "4"
    * DO REVIEW INFORMATION
    CLEAR
    DO VUPDATE

OTHERWISE
    DO WRONGKEY

ENDCASE

ENDDO (.T.)
RETURN
* EOF: VMAINT.PRG
-----
* Program...: VMPADD.PRG
* Author...: 1LT HANS GARCIA
* Date.....: 08/15/89
* CALLED FROM VMAINT.PRG
* Notes: This program adds new vehicles to the file.
*       and re-indexes the appended file by NSN#.
*
USE VEHICLES INDEX NSN, FAMILY
DO WHILE .T.
    * INITIATE MEMORY VARIABLES
    STORE SPACE(18) TO MNSN
    STORE SPACE(28) TO MVTYPE
    STORE 0 TO MLIFE
    STORE SPACE(1) TO MFAMILY
    STANDBY = "PLEASE STANDBY WHILE RECORDS ARE INDEXED"
    CLEAR
    * DRAW SCREEN
    @ 4, 27 SAY "** A D D   V E H I C L E   *"
    @ 8, 19 SAY "VEHICLE TYPE:"
    @ 8, 33 GET MVTYPE PICTURE;
    "@! XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX"
    @ 10, 19 SAY "National Stock Number:"
    @ 10, 42 GET MNSN PICTURE "@! 9999-99-999-9999AA"
    @ 11, 33 SAY "Example: 3930-00-800-3929CT"
    @ 13, 19 SAY "Life Expectancy:"
    @ 13, 36 GET MLIFE PICTURE "99"
    @ 13, 40 SAY "(1 through 99 in Years)"
    @ 15, 19 SAY "Family Group:"
    @ 15, 33 GET MFAMILY PICTURE "@! A"
    @ 15, 36 SAY "(Select C, L, R, S, or T)"
    @ 17, 19 SAY "[C]=CRASH/FIRE  [L]=MATERIAL HANDLING"

```

```

@ 17, 57 Say      "(463L)"
@ 18, 19 SAY "[R]=REFUELING  [S]=SNOW REMOVAL"
@ 18, 51 SAY "[T]=TOWING"
@ 22, 27 SAY "ENTER VALUES IN ALL BLOCKS"
@ 2, 17 TO 20, 64    DOUBLE
@ 6, 18 TO 6, 63    DOUBLE
READ

* CHECK FOR ACCURACY
OVERITE = " "
OKADD = " "
@ 22,0 CLEAR
@ 22, 16 SAY "IS DATA CORRECT?  [Y]es to SAVE *;
[N]o to Re-Enter"
@ 23, 23 SAY "[Q]uit to MAIN MENU (LOSE CHANGES):";
GET OKADD PICTURE "@! A"
READ

DO CASE
CASE OKADD = "N"
CLEAR ALL  && CLEAR ALL MEMORY VARIABLES
LOOP      && AND RE-ENTER VEHICLE DATA
CASE OKADD = "Y"
GO TOP
SEEK MNSN
IF FOUND()
MTYPE = RECNO()
@ 22,0 CLEAR
SET COLOR TO W+/R,W+/R,B
@ 22,0 SAY REPLICATE(" ",80)
@ 23,0 SAY REPLICATE(" ",80)
@ 24,0 SAY REPLICATE(" ",80)
??CHR(7)
@ 23,12 SAY "NSN# "+"&MNSN"
@ 23,36 SAY "ALREADY EXISTS -"
@ 23,53 SAY "OVERWRITE IT? (Y/N):";
GET OVERITE PICTURE "Y"
READ
IF OVERITE = "N"
SET COLOR TO GR+/B,W+/R,B
LOOP
ELSE
SET COLOR TO GR+/B,W+/R,B
GOTO MTYPE
REPLACE NSN WITH MNSN
REPLACE TYPE WITH MVTTYPE
REPLACE LIFE WITH MLIFE
REPLACE FAMILY WITH MFAMILY
ENDIF (OVERITE)
ENDIF (FOUND)

```



```

        IF OVERITE # "Y"                && ADD NEW RECORD
        GO BOTTOM                        && IF THE NEW DATA
        APPEND BLANK                    && IS NOT REPLACING
        REPLACE NSN WITH MNSN          && EXIXTING DATA.
        REPLACE TYPE WITH MVTYPE
        REPLACE LIFE WITH MLIFE
        REPLACE FAMILY WITH MFAMILY
        MTYPE = RECNO()
    ENDIF

    CASE OKADD ="Q"
        CLEAR ALL
        RETURN TO MASTER
    OTHERWISE
        DO WRONGKEY
        LOOP
    ENDCASE

    SET COLOR TO GR+/B,W+/R,B
    NOTESADD = " "
    @ 22,0 CLEAR
    @ 22, 11 SAY "DO YOU WISH TO ADD NARRATIVES/NOTES TO"
    @ 22, 50 SAY "THIS RECORD (Y/N)?";
    GET NOTESADD PICTURE "Y"
    READ

    IF NOTESADD = "Y"
        @ 0,0 GET CONTRACT
        CLEAR GETS
        CLEAR
        SET FORMAT TO VMEMO
        EDIT RECORD MTYPE
        SET FORMAT TO
        CLEAR
    ENDIF

    CLEAR
    ONEMORE = " "
    @ 22,0 CLEAR
    @ 10, 17 TO 14, 64 DOUBLE
    @ 12, 20 SAY "DO YOU WISH TO ADD ANOTHER RECORD (Y/N)?";
    GET ONEMORE PICTURE "Y"
    READ

```

```

    IF ONEMORE = "Y"
        LOOP
    ELSE
        CLEAR
        @ 10, 17 TO 14, 62 DOUBLE
        DO CENTER WITH 12, 80, STANDBY
        USE VEHICLES INDEX NSN, FAMILY
        REINDEX
        RETURN
    ENDIF
ENDDO (.T.)
* EOF VMPADD.PRG
-----
* Program...: VMPEDIT.PRG
* Author...: 1LT HANS GARCIA
* Date.....: 08/15/89
* CALLED FROM VMAINT.PRG
* Notes: This program edits existing vehicles on file
*       and re-indexes the updated file by NSN#.
*
USE VEHICLES INDEX NSN, FAMILY
DO WHILE .T.
    GO TOP
    * INITIATE MEMORY VARIABLES
    STORE SPACE(18) TO MNSN
    STORE SPACE(28) TO MVTYPE
    STORE 0 TO MLIFE
    STORE SPACE(1) TO MFAMILY
    * DRAW SCREEN
    CLEAR
    @ 4, 17 TO 6, 62 DOUBLE
    @ 5, 21 SAY "ENTER NSN FOR VEHICLE YOU WISH TO EDIT"

    MTYPE = " "
    TRYAGAIN = " "
    DO MANUAL
    CLEAR
    * NO MATCH!
    IF TRYAGAIN = "N"
        RETURN
    ENDIF

    * NSN FOUND - PROCEED TO EDIT
    GOTO MTYPE
    @ 4,25 SAY "* EDIT VEHICLE *"
    @ 8,19 SAY "VEHICLE TYPE:"
    @ 8,33 GET TYPE PICTURE;
    "@! XXXXXXXXXXXXXXXXXXXXXXXXXXXX"
    @ 10,19 SAY "National Stock Number:"
    @ 10,42 GET NSN PICTURE "@! 9999-99-999-9999AA"
    @ 11,33 SAY "Example: 3930-00-800-3929CT"

```

```

@ 13,19 SAY "Life Expectancy:"
@ 13,36 GET LIFE PICTURE "99"
@ 13,40 SAY "(1 through 99 in Years)"
@ 15,19 SAY "Family Group:"
@ 15,33 GET FAMILY PICTURE "@! A"
@ 15,36 SAY "(Select C, L, R, S, or T)"
@ 17, 19 SAY "[C]=CRASH/FIRE [L]=MATERIAL HANDLING"
@ 17, 57 Say "(463L)"
@ 18, 19 SAY "[R]=REFUELING [S]=SNOW REMOVAL"
@ 18, 51 SAY "[T]=TOWING"
@ 22,26 SAY "MAKE ANY NECESSARY CORRECTIONS"
@ 2,17 TO 20, 64 DOUBLE
@ 6,18 TO 6, 63 DOUBLE
READ

```

```

* CHECK FOR ACCURACY
OKEDIT = " "
@ 22,0 CLEAR
@ 22, 16 SAY "IS DATA CORRECT? [Y]es to SAVE *;
[N]o to Re-Enter"
@ 23, 23 SAY "[Q]uit to MAIN MENU (LOSE CHANGES):";
GET OKEDIT PICTURE "@! A"
READ

```

```

DO CASE
CASE OKEDIT = "N"
LOOP
CASE OKEDIT = "Y"
MNSN = NSN
MVTYPE = TYPE
MLIFE = LIFE
MFAMILY = FAMILY
REPLACE NSN WITH MNSN
REPLACE TYPE WITH MVTYPE
REPLACE LIFE WITH MLIFE
REPLACE FAMILY WITH MFAMILY

```

```

CASE OKEDIT ="Q"
CLEAR ALL
RETURN TO MASTER

```

```

OTHERWISE
DO WRONGKEY
LOOP

```

```

ENDCASE

```

```

NOTESEDT = " "
@ 22,0 CLEAR
@ 22, 10 SAY "DO YOU WISH TO EDIT NARRATIVES/NOTES TO"
@ 22, 50 SAY "THIS RECORD (Y/N)?";
GET NOTESEDT PICTURE "Y"
READ
MTYPE = RECNO()

```

```

        IF NOTESEDIT = "Y"
            CLEAR
            SET FORMAT TO VMEMO
            EDIT RECORD MTYPE
            SET FORMAT TO
            CLEAR
        ENDIF

    CLEAR
    ONEMORE = " "
    @ 22, 0 CLEAR
    @ 10,17 TO 14, 64 DOUBLE
    @ 12,20 SAY "DO YOU WISH TO EDIT ANOTHER RECORD (Y/N)?";
    GET ONEMORE PICTURE "Y"
    READ

    IF ONEMORE = "Y"
        LOOP
    ELSE
        CLEAR
        @ 10, 17 TO 14, 62 DOUBLE
        STDBY = "PLEASE STANDBY WHILE RECORDS ARE INDEXED"
        DO CENTER WITH 12, 80, STDBY
        USE VEHICLES INDEX NSN, FAMILY
        REINDEX
        RETURN
    ENDIF
ENDDO (.T.)
* EOF VMPEDIT.PRG
-----
* Program...: VMPDEL.PRG
* Author...: 1LT HANS GARCIA
* Date.....: 08/15/89
* CALLED FROM VMAINT.PRG
* Notes: This program deletes existing vehicles on file
*       and re-indexes the remaining file by NSN#.
*
USE VEHICLES INDEX NSN, FAMILY
DO WHILE .T.
GO TOP
CLEAR

* DRAW SCREEN
@ 4, 17 TO 6, 62 DOUBLE
@ 5, 20 SAY "ENTER NSN FOR VEHICLE YOU WISH TO DELETE"

PADNSN="
MTYPE="
TRYAGAIN="
DO MANUAL && ***** MANUAL NSN ENTRY PROCEDURE *****

```

```

CLEAR
* NO MATCH!
  IF TRYAGAIN = "N"
    RETURN
  ENDIF

* NSN FOUND - PROCEED TO DELETE
MTYPE = RECNO()
@ 4,23 SAY "* DELETE VEHICLE *"
CENTYPE = "VEHICLE TYPE: "+TRIM(TYPE)
DO CENTER WITH 8, 80, CENTYPE
@ 10,19 SAY "National Stock Number:"
@ 10,42 SAY NSN PICTURE "9999-99-999-9999AA"
@ 12,19 SAY "Life Expectancy:"
@ 12,36 SAY LIFE PICTURE "99"
@ 12,39 SAY "Years"
@ 12,45 SAY "* Family Group:"
@ 12,61 SAY FAMILY PICTURE "X"
@ 14,19 SAY "[C]=CRASH/FIRE [L]=MATERIAL HANDLING (463L)"
@ 15,19 SAY "[R]=REFUELING [S]=SNOW REMOVAL [T]=TOWING"
@ 2,17 TO 17, 64 DOUBLE
@ 6,18 TO 6, 63 DOUBLE

* CHECK FOR ACCURACY

OKDELETE = " "
@ 21,0 CLEAR
SET COLOR TO W+/R,W+/R,B
@ 21,0 SAY REPLICATE(" ",80)
@ 22,0 SAY REPLICATE(" ",80)
@ 23,0 SAY REPLICATE(" ",80)
@ 24,0 SAY REPLICATE(" ",80)
@ 21,0 TO 24,79 DOUBLE
@ 22, 11 SAY "DELETE THIS VEHICLE? [Y]es to"
SET COLOR TO W+*/R
@ 22, 43 SAY "DELETE"
SET COLOR TO W+/R,W+/R,B
@ 22, 50 SAY "* [N]o to Re-Enter NSN"
@ 23, 30 SAY "[Q]uit to MAIN MENU:";
GET OKDELETE PICTURE "@! A"
SET COLOR TO GR+/B,W+/R,B
READ
DO CASE
  CASE OKDELETE = "N"
    LOOP

  CASE OKDELETE = "Y"
    DELETE ALL FOR PADNSN = NSN

```

```

CASE OKDELETE ="Q"
  CLEAR ALL
  RETURN TO MASTER
OTHERWISE
  DO WRONGKEY
  LOOP
ENDCASE

```

```

CLEAR
ONEMORE = " "
@ 22,0 CLEAR
@ 10,17 TO 14, 65 DOUBLE
@ 12,19 SAY "DO YOU WISH TO DELETE ANOTHER RECORD (Y/N)?";
GET ONEMORE PICTURE "Y"
READ

```

```

IF ONEMORE = "Y"
  LOOP
ELSE
  CLEAR
  @ 10, 17 TO 14, 62 DOUBLE
  STBY = "PLEASE TANDBY WHILE RECORDS ARE DELETED"
  DO CENTER WITH 12, 80, STBY
  PACK && ***** PACK THE DATABASE *****
  USE VEHICLES INDEX NSN, FAMILY
  REINDEX
  RETURN

```

```

ENDIF

```

```

ENDDO (.T.)

```

```

* EOF VMPDEL.PRG

```

```

-----
* Program...: VUPDATE.PRG
* Author...: LT HANS GARCIA
* Date.....: 08/15/89
* Notice...: Copyright (c) 1989. LT HANS GARCIA
* All Rights Reserved
* Notes: This program is intended for use by a program
*       director who wishes to update the MASTER file
*       from information contained in TRANSACTION files.
*       This option is to be used only on systems with
*       hard drive.
*

```

```

SET CONFIRM ON
SET STATUS OFF
Ret = CHR(17)+CHR(196)+CHR(217)

```

```

CLEAR
OKUPDATE = " "

```

```

DO WHILE .NOT. UPPER(OKUPDATE)$"YNQ"
  CLEAR
  @ 8, 10 SAY "THIS PROCEDURE REQUIRES YOUR SYSTEM"
  @ 8, 46 SAY "TO HAVE A HARD DRIVE."
  @ 9, 10 SAY "THE HARD DRIVE WILL BE UPDATED FROM"
  @ 9, 46 SAY "CURRENT INFORMATION"
  @ 10, 10 SAY "PROVIDED BY PROGRAM MANAGERS ON 5.25"
  @ 10, 47 SAY "inch FLOPPY DISKS."
  @ 12, 10 SAY "PLEASE BE SURE AVMP IS SET UP ON YOUR"
  @ 12, 48 SAY "SYSTEM'S HARD DRIVE."
  @ 11, 8 TO 13, 69
  @ 14, 10 SAY "DO YOU WISH TO PROCEED WITH UPDATE?"
  @ 14, 46 SAY "[Y]es to Proceed,"
  @ 15, 10 SAY "[N]o to Return to UTILITIES MENU,"
  @ 15, 44 SAY "[Q]uit to MAIN MENU:";
  GET OKUPDATE PICTURE "@! X"
  READ
  IF .NOT. UPPER(OKUPDATE)$"YNQ"
    DO WRONGKEY
    OKUPDATE = " "
  ENDIF
ENDDO (OKUPDATE NOT Y, N or Q)

DO CASE
  CASE OKUPDATE = "Q"
    CLEAR ALL
    RETURN TO MASTER
  CASE OKUPDATE = "N"
    RETURN
  CASE OKUPDATE = "Y"
    UPDRV = "C:\AVMP"
    LOADING = .T.

  DO WHILE LOADING
    CLEAR
    @ 6, 11 SAY "ENTER THE FULL DOS PATH USED TO"
    @ 6, 43 SAY "SET UP AVMP ON THIS MACHINE"
    @ 8, 20 SAY "* IMPORTANT * INCLUDE DRIVES &"
    @ 8, 51 SAY "DIRECTORIES"
    @ 10, 28 SAY "(EXAMPLE -> C:\AVMP or C:\VMP)"
    @ 12, 32 SAY "PATH -> " GET UPDRV
    READ

    UPCHOICE = " "

    DO WHILE .NOT. UPPER(UPCHOICE)$"QY"
      CLEAR
      @ 4, 19 TO 19, 60 DOUBLE
      @ 6, 25 SAY "PLEASE INSERT PROGRAM MANAGER"
      @ 8, 25 SAY "DISKETTE IN DRIVE <A>"
      SET COLOR TO GR+*/B,W+/R,B
    ENDWHILE
  ENDWHILE

```

```

@ 10, 25 SAY "          * C A U T I O N *
SET COLOR TO GR+/B,W+/R,B
@ 12, 25 SAY "ALL RECORDS IN THE MASTER FILE
@ 14, 23 SAY "WILL BE OVERWRITTEN WITH"
@ 14, 48 SAY "NEW DATA!"
@ 16, 25 SAY "    PRESS [Y]es TO CONTINUE
@ 17, 25 SAY "    or [Q]uit to MAIN MENU";
GET UPCHOICE PICTURE "@! X"
READ
    IF .NOT. UPPER(UPCHOICE)$"QY"
        DO WRONGKEY
        UPCHOICE = " "
    ENDIF (UPCHOICE # QY)
ENDDO (UPCHOICE # QY)

DO CASE
CASE UPCHOICE = "Q"
    CLEAR ALL
    RETURN TO MASTER
CASE UPCHOICE = "Y"
    UPDBF = TRIM("&UPDRV ")+"\\VEHTEMP.DBF"
    UPDBT = TRIM("&UPDRV ")+"\\VEHTEMP.DBT"
    UPNDX = TRIM("&UPDRV ")+"\\VEHTEMP.NDX"
    CLEAR
    @ 11, 20 SAY "PLEASE STAND BY WHILE FILES
    @ 11, 48 SAY "ARE COPIED..."
    @ 9, 18 TO 13, 62 DOUBLE

    IF FILE("A:VEHICLES.DBF")
        @ 20, 30 SAY "COPYING FILE #1 of 3."
        COPY FILE A:VEHICLES.DBF TO &UPDBF
    ELSE
        DO CANTFIND    && SEARCH DRIVE<A> TO BE
        LOOP           && SURE FILES ARE ON DISK
    ENDIF

    IF FILE("A:VEHICLES.DBT")
        @ 20, 30 SAY "COPYING FILE #2 of 3."
        COPY FILE A:VEHICLES.DBT TO &UPDBT
    ELSE
        DO CANTFIND
        LOOP
    ENDIF

    IF FILE("A:NSN.NDX")
        @ 20, 30 SAY "COPYING FILE #3 of 3."
        COPY FILE A:NSN.NDX TO &UPNDX
    ELSE
        DO CANTFIND
        LOOP
    ENDIF

```



```

LOADING = .F.

CLEAR
SET CONSOLE OFF
@ 9, 17 TO 13. 62 DOUBLE
@ 11, 19 SAY "PLEASE STAND BY WHILE"
@ 11, 41 SAY "FILES ARE UPDATED..."
***** UPDATE MASTER FILE *****

SELECT A
USE VEHICLES INDEX NSN
REINDEX
SELECT B
USE VEHTEMP INDEX VEHTEMP
REINDEX
GO TOP
RC = RECCOUNT()
TRIMRC = LTRIM(STR(RC))
COUNTER = 1
DO WHILE .NOT. EOF()
    MNSN = NSN
    TRIMCNT = LTRIM(STR(COUNTER))
    SELECT A    && USE HARD DRIVE MASTER FILE
    SEEK MNSN  && SEARCH FOR A STOCK NUMBER MATCH
        IF FOUND()
            DO REPFIELD
        ELSE
            APPEND BLANK
            DO REPFIELD
        ENDIF
    SELECT B
    @ 21, 8 SAY "UPDATING RECORD NUMBER      OF      ."
    IF COUNTER >= (RC-4)
        @ 21, 42 SAY "JUST A FEW MORE"
        @ 21, 58 SAY "RECORDS TO GO!"
    ELSE
        @ 21, 42 SAY "REMEMBER--PATIENCE"
        @ 21, 61 SAY "IS A VIRTUE!"
    ENDIF (COUNTER >= RC-4)
    @ 21, 31 GET TRIMCNT
    @ 21, 37 GET TRIMRC
    CLEAR GETS
    COUNTER = COUNTER + 1
    SKIP
ENDDO (EOF)
ENDCASE (UPCHOICE)
ENDDO (LOADING)
ENDCASE (OKUPDATE)

***** ERASE TEMPORARY FILES CREATED EARLIER *****
CLOSE DATABASES

```

```
ERASE VEHTEMP.DBF
ERASE VEHTEMP.DBT
ERASE VEHTEMP.NDX
CLEAR
```

```
@ 12, 12 SAY "MASTER FILE SUCCESSFULLY UPDATED!"
@ 12, 46 SAY "PRESS &RET TO CONTINUE"
@ 10, 10 TO 14, 69 DOUBLE
WAIT " "
RETURN TO MASTER
* EOF VUPDATE.PRG
```

```
-----
* Program...: UTILITY.PRG
* Author...: 1LT HANS GARCIA
* Date.....: 08/15/89
* PROCEDURE FILES
*
*-----
```

PROCEDURE WRONGKEY

```
SET COLOR TO W+/R,W+/R,B
@ 22,0 SAY REPLICATE(" ",80)
@ 23,0 SAY REPLICATE(" ",80)
@ 24,0 SAY REPLICATE(" ",80)
??CHR(7)
@ 23,15 SAY "NOT A VALID SELECTION -- "
@ 23,40 SAY "PRESS ANY KEY TO TRY AGAIN "
WAIT ""
SET COLOR TO GR+/B,W+/R,B
@ 22,0 CLEAR
RETURN
*-----
```

PROCEDURE MANUAL

```
NChoice = "Y"
DO WHILE NChoice # " "
```

```
USE VEHICLES INDEX NSN && Reset database after loop
GO TOP
Search = " "
@ 7,17 TO 15,62 DOUBLE
@ 11,31 SAY "Example: 3930-00-800-3929CT"
@ 13,20 SAY "[Please Include ALL Numbers & Letters]"
@ 9,20 SAY "ENTER STOCK NUMBER: ";
GET Search PICTURE "@! 9999-99-999-9999AA"
READ
SEEK Search
IF FOUND() && ***** NSN Found *****
PADNSN = Search
TRYAGAIN = "Y"
NCHOICE = " "
MTYPE = RECNO()
ELSE
```

```

@ 7, 0 CLEAR  && ***** NSN Not Found *****
@ 7,17 TO 15,62 DOUBLE
Ret = CHR(17)+CHR(196)+CHR(217)
@ 9,19 SAY "Stock Number "
@ 9,32 GET Search
CLEAR GETS
@ 9,50 SAY " Not Found."
@ 13,20 SAY "[Y]=Retry * [N]=Return to Previous Menu"
@ 11,29 SAY "Try Again? (Y/N &Ret)" GET NChoice;
PICTURE "Y"  && Only permits Y or N entry
READ

IF NChoice = "Y"
    @ 7, 0 CLEAR
    TRYAGAIN = "Y"
    LOOP  && Re-enter Stock Number
ELSE && ***** NChoice="N" *****
    VCHOICE = " "
    NChoice=" "
    TRYAGAIN = "N"
    CLEAR
ENDIF (NChoice)
ENDIF (FOUND)
ENDDO (NChoice)
RETURN
*-----
PROCEDURE ErrTrap
CLEAR
SET COLOR TO W+/R,W+/R,B
@ 22,0 SAY REPLICATE(" ",80)
@ 23,0 SAY REPLICATE(" ",80)
@ 24,0 SAY REPLICATE(" ",80)
@ 22,0 TO 24,79 DOUBLE
??CHR(7)
@ 23, 11 SAY "ERROR ENCOUNTERED -"
@ 23, 31 SAY "PRESS ANY KEY TO RETURN TO MAIN MENU"
WAIT""
SET COLOR TO GR+/B,W+/R,B
CLEAR
RETURN TO MASTER
*-----
PROCEDURE CENTER
PARAMETERS MLine, MWidth, MText

@ MLine, (MWidth - Len(TRIM(MText)))/2 SAY TRIM(MText)
RETURN

```

*-----
PROCEDURE REPFIELD

REPLACE A->FAMILY WITH B->FAMILY
REPLACE A->TYPE WITH B->TYPE
REPLACE A->NSN WITH B->NSN
REPLACE A->LIFE WITH B->LIFE
REPLACE A->CONTRACT WITH B->CONTRACT
REPLACE A->AUTH89 WITH B->AUTH89
REPLACE A->AUTH90 WITH B->AUTH90
REPLACE A->AUTH91 WITH B->AUTH91
REPLACE A->AUTH92 WITH B->AUTH92
REPLACE A->AUTH93 WITH B->AUTH93
REPLACE A->AUTH94 WITH B->AUTH94
REPLACE A->AUTH95 WITH B->AUTH95
REPLACE A->AUTH96 WITH B->AUTH96
REPLACE A->AUTH97 WITH B->AUTH97
REPLACE A->AUTH98 WITH B->AUTH98
REPLACE A->AOH89 WITH B->AOH89
REPLACE A->AOH90 WITH B->AOH90
REPLACE A->AOH91 WITH B->AOH91
REPLACE A->AOH92 WITH B->AOH92
REPLACE A->AOH93 WITH B->AOH93
REPLACE A->AOH94 WITH B->AOH94
REPLACE A->AOH95 WITH B->AOH95
REPLACE A->AOH96 WITH B->AOH96
REPLACE A->AOH97 WITH B->AOH97
REPLACE A->AOH98 WITH B->AOH98
REPLACE A->TOTC89 WITH B->TOTC89
REPLACE A->TOTC90 WITH B->TOTC90
REPLACE A->TOTC91 WITH B->TOTC91
REPLACE A->TOTC92 WITH B->TOTC92
REPLACE A->TOTC93 WITH B->TOTC93
REPLACE A->TOTC94 WITH B->TOTC94
REPLACE A->TOTC95 WITH B->TOTC95
REPLACE A->TOTC96 WITH B->TOTC96
REPLACE A->TOTC97 WITH B->TOTC97
REPLACE A->TOTC98 WITH B->TOTC98
REPLACE A->MRC89 WITH B->MRC89
REPLACE A->MRC90 WITH B->MRC90
REPLACE A->MRC91 WITH B->MRC91
REPLACE A->MRC92 WITH B->MRC92
REPLACE A->MRC93 WITH B->MRC93
REPLACE A->MRC94 WITH B->MRC94
REPLACE A->MRC95 WITH B->MRC95
REPLACE A->MRC96 WITH B->MRC96
REPLACE A->MRC97 WITH B->MRC97
REPLACE A->MRC98 WITH B->MRC98
REPLACE A->CFR89 WITH B->CFR89
REPLACE A->CFR90 WITH B->CFR90
REPLACE A->CFR91 WITH B->CFR91
REPLACE A->CFR92 WITH B->CFR92

REPLACE A->CFR93 WITH B->CFR93
REPLACE A->CFR94 WITH B->CFR94
REPLACE A->CFR95 WITH B->CFR95
REPLACE A->CFR96 WITH B->CFR96
REPLACE A->CFR97 WITH B->CFR97
REPLACE A->CFR98 WITH B->CFR98
REPLACE A->PDO89 WITH B->PDO89
REPLACE A->PDO90 WITH B->PDO90
REPLACE A->PDO91 WITH B->PDO91
REPLACE A->PDO92 WITH B->PDO92
REPLACE A->PDO93 WITH B->PDO93
REPLACE A->PDO94 WITH B->PDO94
REPLACE A->PDO95 WITH B->PDO95
REPLACE A->PDO96 WITH B->PDO96
REPLACE A->PDO97 WITH B->PDO97
REPLACE A->PDO98 WITH B->PDO98
REPLACE A->PDR89 WITH B->PDR89
REPLACE A->PDR90 WITH B->PDR90
REPLACE A->PDR91 WITH B->PDR91
REPLACE A->PDR92 WITH B->PDR92
REPLACE A->PDR93 WITH B->PDR93
REPLACE A->PDR94 WITH B->PDR94
REPLACE A->PDR95 WITH B->PDR95
REPLACE A->PDR96 WITH B->PDR96
REPLACE A->PDR97 WITH B->PDR97
REPLACE A->PDR98 WITH B->PDR98
REPLACE A->TOTD89 WITH B->TOTD89
REPLACE A->TOTD90 WITH B->TOTD90
REPLACE A->TOTD91 WITH B->TOTD91
REPLACE A->TOTD92 WITH B->TOTD92
REPLACE A->TOTD93 WITH B->TOTD93
REPLACE A->TOTD94 WITH B->TOTD94
REPLACE A->TOTD95 WITH B->TOTD95
REPLACE A->TOTD96 WITH B->TOTD96
REPLACE A->TOTD97 WITH B->TOTD97
REPLACE A->TOTD98 WITH B->TOTD98
REPLACE A->RAMR89 WITH B->RAMR89
REPLACE A->RAMR90 WITH B->RAMR90
REPLACE A->RAMR91 WITH B->RAMR91
REPLACE A->RAMR92 WITH B->RAMR92
REPLACE A->RAMR93 WITH B->RAMR93
REPLACE A->RAMR94 WITH B->RAMR94
REPLACE A->RAMR95 WITH B->RAMR95
REPLACE A->RAMR96 WITH B->RAMR96
REPLACE A->RAMR97 WITH B->RAMR97
REPLACE A->RAMR98 WITH B->RAMR98
REPLACE A->OS89 WITH B->OS89
REPLACE A->OS90 WITH B->OS90
REPLACE A->OS91 WITH B->OS91
REPLACE A->OS92 WITH B->OS92
REPLACE A->OS93 WITH B->OS93

```

REPLACE A->OS94 WITH B->OS94
REPLACE A->OS95 WITH B->OS95
REPLACE A->OS96 WITH B->OS96
REPLACE A->OS97 WITH B->OS97
REPLACE A->OS98 WITH B->OS98
REPLACE A->NASS89 WITH B->NASS89
REPLACE A->NASS90 WITH B->NASS90
REPLACE A->NASS91 WITH B->NASS91
REPLACE A->NASS92 WITH B->NASS92
REPLACE A->NASS93 WITH B->NASS93
REPLACE A->NASS94 WITH B->NASS94
REPLACE A->NASS95 WITH B->NASS95
REPLACE A->NASS96 WITH B->NASS96
REPLACE A->NASS97 WITH B->NASS97
REPLACE A->NASS98 WITH B->NASS98
REPLACE A->TOTI89 WITH B->TOTI89
REPLACE A->TOTI90 WITH B->TOTI90
REPLACE A->TOTI91 WITH B->TOTI91
REPLACE A->TOTI92 WITH B->TOTI92
REPLACE A->TOTI93 WITH B->TOTI93
REPLACE A->TOTI94 WITH B->TOTI94
REPLACE A->TOTI95 WITH B->TOTI95
REPLACE A->TOTI96 WITH B->TOTI96
REPLACE A->TOTI97 WITH B->TOTI97
REPLACE A->TOTI98 WITH B->TOTI98
RETURN
*-----
PROCEDURE CANTFIND
SET COLOR TO W+/R,W+/R,B
CLEAR
@ 8,18 TO 18,66
@ 10,21 SAY "PROGRAM CANNOT LOCATE VEHICLE FILES ON THE"
@ 11,20 SAY "DISK YOU HAVE INSTALLED"
@ 11,44 SAY "IN DRIVE <A>. PLEASE"
@ 12,20 SAY "VERIFY THE FOLLOWING 3 FILES ARE"
@ 12,53 SAY "ON THE DISK:"
@ 14,20 SAY "      VEHICLES.DBF   VEHICLES.DBT   NSN.NDX"
@ 16,22 SAY "AFTER RE-INSTALLING, PRESS &RET TO CONTINUE"
WAIT " "
SET COLOR TO GR+/B,W+/R,B
CLEAR
RETURN
* EOF UTILITY.PRG

```

```

-----
* Program...: VMEMO.FMT
* CALLED FROM VEDIT.PRG, VMPADD.PRG & VMPEDIT.PRG
* 08/15/89
* Notes: This format file sets of the screen used to
*       edit the contract narratives/notes.
*
@ 2, 9 SAY "The following procedure will allow you"
@ 2,48 SAY "to view or edit"
@ 3,11 SAY "the contract narratives for the selected"
@ 3,52 SAY "vehicle."
@ 5, 8 SAY "* Please notice the different"
@ 5,39 SAY "keystroke combinations! *"
@ 4.0 GET CONTRACT
@ 10,13 SAY "To VIEW or EDIT Narratives. Press"
@ 10,48 SAY "Ctrl"
@ 10,55 SAY "PgDn"
@ 10,53 SAY "+"
@ 9,47 TO 11,52
@ 9,54 TO 11,59
@ 13,5 SAY "To SAVE Narratives (after editing), Press"
@ 13,48 SAY "Ctrl"
@ 13,55 SAY "PgUp"
@ 13,53 SAY "+"
@ 14,25 SAY "-----"
@ 12,47 TO 14,52
@ 12,54 TO 14,59
@ 20,18 SAY "To RETURN To PREVIOUS SCREEN, press"
@ 20,55 SAY "PgUp"
@ 19,54 TO 21,59
* EOF VMEMO.FMT
-----

```

Appendix C: Automated Vehicle Master Plan User's Manual and Tutorial

AVMP User's Manual

The Automated Vehicle Master Plan (AVMP) is a menu driven database management system which enables you to manage your vehicle fleet following the guidelines established by the USAF Vehicle Master Plan (OPR: WR-ALC/MMVV). At the heart of the program is the Five Year Outlook which details the vehicle acquisition, availability, and depot status. The program stores up to ten years worth of data and produces both on-screen and printed reports for all vehicle types. You may add, edit or delete vehicles which are maintained by the National Stock Number (NSN). AVMP will operate independent of any other software on any IBMTM or IBMTM compatible microcomputer (such as the ZenithTM Z-248 system) with a minimum of 512 kilobytes of Random Access Memory (RAM). It can also be run using Ashton-Tate dBase III PlusTM. Printed reports can be produced on any printer capable of emulating EpsonTM standard. This User's Manual will explain AVMP's menu structure and the options available to you at each level.

Installation.

You may operate AVMP from a floppy disk system by inserting the AVMP program disk into disk drive A and typing the following:

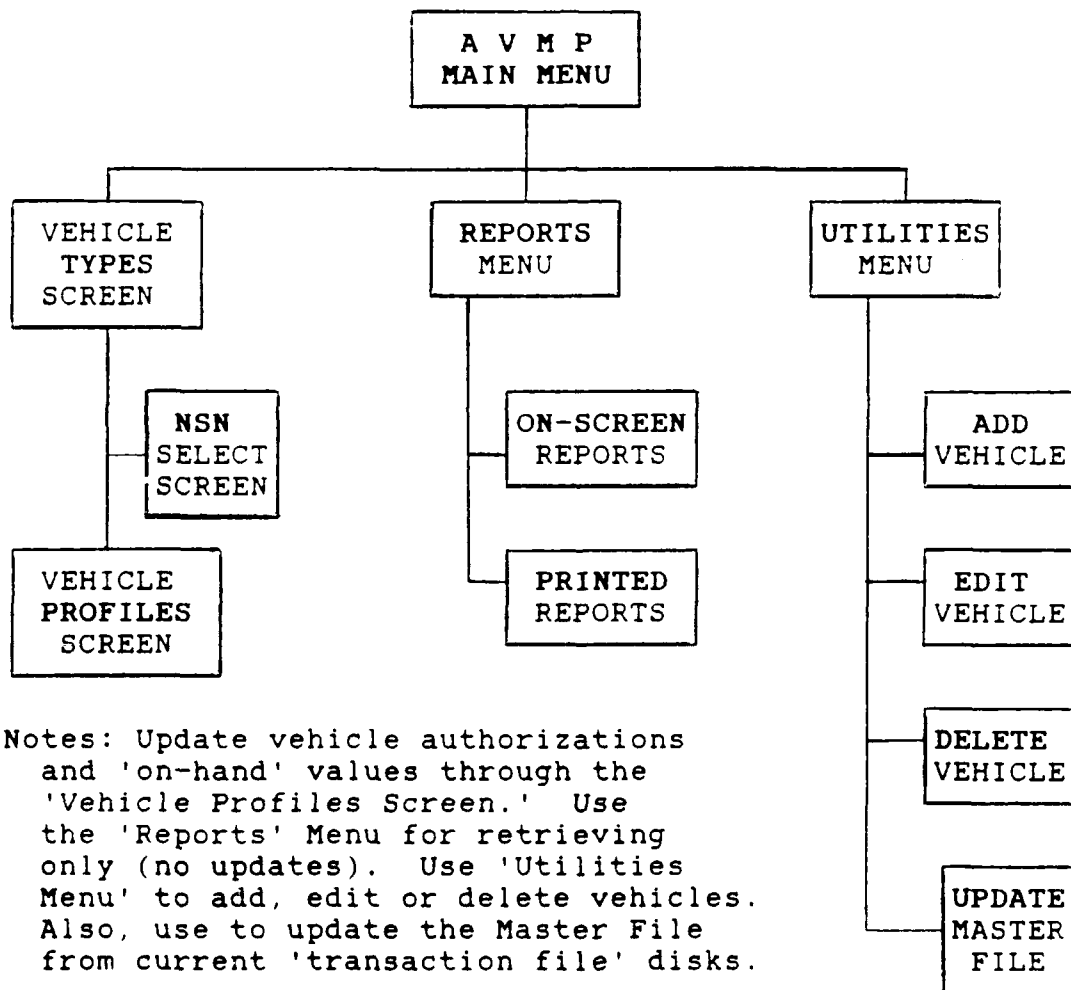
A> "AVMP"

All necessary files are contained on the program disk.

You may also install AVMP on your system's hard drive by inserting the AVMP program disk into disk drive A and typing the following:

A> "INSTALL.BAT"
-----*

The program modules are set up as follows:



Notes: Update vehicle authorizations and 'on-hand' values through the 'Vehicle Profiles Screen.' Use the 'Reports' Menu for retrieving only (no updates). Use 'Utilities Menu' to add, edit or delete vehicles. Also, use to update the Master File from current 'transaction file' disks.

Figure 30. AVMP Program Modules

MAIN MENU

AVMP's Main Menu allows you to select one of three subroutines or Quit AVMP:

AUTOMATED VEHICLE MASTER PLAN * MAIN MENU *
1. VEHICLE PROFILES
2. REPORTS
3. UTILITIES
[Q]uit AVMP
SELECT

Figure 31. AVMP Main Menu

Throughout the entire program, choice [Q] returns you to this screen and exits you out of the Main Menu. An incorrect selection will cause a friendly reminder to appear. The caret (^) symbol represents the 'Ctrl' key. Therefore, ^S means press the Ctrl and S keys simultaneously. Any systems errors (invalid disks, printer offline, etc.) will automatically return the program to the Main Menu. The program can operate from a 5.25 inch floppy disk drive or from a hard disk system. The Master File Update is designed for hard drive systems only.

Selection [1] Vehicle Profiles calls up the Vehicle Type Screen from which you will select the vehicle type you wish to review or "profile."

VEHICLE TYPES

SELECT A VEHICLE TYPE FROM THE LIST BELOW

01 STRADDLE CRANE 50K ATR	16 REFUELING VEHICLES R-5/9/11
02 STRADDLE CRANE 75K (Non-ATR)	17 TRK FIRE CRS P-19
03 25K STANDARD LOADER	18 WATER TRK P-18
04 10K STANDARD FORKLIFT	19 TRK FFGT CRS P-10
05 WBEL (WIDE BODY LOADER)	20 TRK FFGT PMR P-22 (P-12)
06 10K AT FORKLIFT	21 TRK FFGT PMR P-24 (P-8)
07 13K AT FORKLIFT	22 CRASH TRUCK P-15
08 25K TACTICAL LOADER	23 CRASH TRUCK P-23 (P-2)
09 40 FT ROLLERIZED TRAILER	24 CRASH TRUCK P-20 (P-13)
10 40K LOADER	25 TRK FFGT HIGH-REACH(P-21)
11 60K LOADER (FUTURE USE)	26 TRK FIRE MINI PUMPER
12 TRAC ACFT TWG MB2	27 SNO PL TRK 54000GVW
13 TRAC ACFT TWG MB4	28 SNOW REMOVAL UNIT 3000 TPH
14 TRAC ACFT TWG U-30	29 SWEEPER ROTARY BLOWER
15 TRAC TOW SUPPORT EQUIP	30 TRK SNOW RML MLTPU 2000 TPH

SELECT [Q]uit to MAIN MENU, 01-30 for 5-YEAR OUTLOOK,
or [M] FOR MANUAL ENTRY (National Stock Number):

Figure 32. Vehicle Types Screen

You may select one of the 30 predefined vehicles by entering any number from 01 through 30 for the 5-Year Outlook. You may also select a vehicle by pressing the [M] key. This calls up the NSN selection screen and requires you to input the National Stock Number for the specific vehicle to be profiled. If the NSN is not on file, you may retry another NSN or return to the previous menu.

ENTER STOCK NUMBER: - - - - -

Example: 3930-00-800-3929CT

[Please Include ALL Numbers & Letters]

Figure 33. NSN Selection Screen

Stock Number 1234-56-789-0123XY Not Found.

Try Again? (Y/N) *

[Y]=Retry * [N]=Return to Previous Menu

Figure 34. NSN Retry Screen

This will take you to the Five-Year Outlook Screen.

VEHICLE MASTER PLAN 5-YEAR OUTLOOK

ITEM: 40K LOADER

ENTER FIRST YEAR (89 thru 94) or 0 to QUIT: █

Figure 35. Five-Year Outlook Screen

The first year of the 5-year outlook will determine the range of the outlook. You may enter any value from 89 through 94. After the program loads the values stored for the vehicle you selected, it will lead you to the Vehicle Profile Screen for that specific vehicle type.

40K LOADER		NSN: 3930-00-800-3929CT			LIFE EXP: 8	
PART I: CURRENT STATUS		FY89	FY90	FY91	FY92	FY93
A. AUTHORIZATIONS		361	361	361	361	361
B. ASSETS ON HAND		286	286	286	286	286
C. DELTA (+/-)		-75	-75	-75	-75	-75
PART II: DEPOT						
A. MEETS REPLACEMENT CRITERIA		181	154	147	120	107
B. CONSIDER FOR RETIREMENT		0	0	0	0	0
C. PLANNED DEPOT OVERHAUL		27	26	27	0	0
D. PLANNED DEPOT REMANUFACTURE		0	0	0	0	0
E. TOTAL DEPOT (C&D)		27	26	27	0	0
F. REMAINING ASSETS MEETING REPLACEMENT CRITERIA		154	128	120	120	107
PART III: INTEGRATION						
A. AUTHORIZATIONS		361	361	361	361	361
B. OVERAGE / SHORTAGE		-75	-75	-75	-75	-75
C. NEW ASSETS (PROJECTED BUY)		0	0	0	0	0
D. DEPOT REBUILD		27	26	27	0	0
E. DELTA (+/-)		-75	-75	-75	-75	-75
PgUp=Prev Menu [P]rint [U]pdate FY89-93 [Q]uit PgDn=Narratives						
Select PgUp or PgDn keys else P, U, or Q followed by <->: █						

Figure 36. Profiles Screen

The Vehicle Profile screen identifies the item, the NSN, and its Life Expectancy. From here, you may update [U] information for any of the five years shown, print [P] an individual report, or review the contract narratives by selecting [PgDn]. To update, press [U] and select one of the five years shown. The cursor will highlight four predefined blocks. If a value shown remains unchanged press enter to retain that value. Otherwise, enter the new amount.

40K LOADER		NSN: 3930-00-800-3929CT		LIFE EXP: 8	
PART I: CURRENT STATUS		FY89	FY90	FY91	FY92 FY93
A. AUTHORIZATIONS	361				
B. ASSETS ON HAND	286				
C. DELTA (+/-)	-75	0			Highlighted Blocks
PART II: DEPOT					accept user inputs.
A. MEETS REPLACEMENT CRITERIA	181				
B. CONSIDER FOR RETIREMENT	0	0			
C. PLANNED DEPOT OVERHAUL	27				
D. PLANNED DEPOT REMANUFACTURE	0				
E. TOTAL DEPOT (C&D)	27	0			
F. REMAINING ASSETS MEETING REPLACEMENT CRITERIA	154	0			Remaining Blocks
PART III: INTEGRATION					in each column
A. AUTHORIZATIONS	361	0			are calculated or
B. OVERAGE / SHORTAGE	-75				
C. NEW ASSETS (PROJECTED BUY)	0				transposed fields.
D. DEPOT REBUILD	27	0			
E. DELTA (+/-)	-75	0			
WHICH YEAR DO YOU WISH TO UPDATE?					
(CHOICES: 89, 90, 91, 92, or 93)					

Figure 37. Profiles Screen (User vs. Calculated Fields)

The program calculates the amounts for (Part IC, IIE, IIF, and IIIE). Because values from Parts I and II are transferred to Part III, you cannot update values after leaving a highlighted block. If a value is incorrect, you must repeat

the update routine. After entering the value for Part IIIC, the program automatically saves the updated values.

Updating Contract Narratives:

This is a trickier process! Stand out by pressing the PgDn key which takes you to the Narrative Retrieval Screen:

The following procedure will allow you to view or edit the contract narratives for the selected vehicle.

* Please notice the different keystroke combinations! *

To VIEW or EDIT Narratives, Press	<div>Ctrl</div> + <div>PgDn</div>
To SAVE Narratives (after editing), Press	<div>Ctrl</div> + <div>PgUp</div>

To RETURN To PREVIOUS SCREEN, press	<div>PgUp</div>

Figure 38. Narratives Retrieval Screen

To view or edit the narratives, press ^PgDn. You may then add or change contract information.

Optional: The F1 key activates the on-screen text editor help menu. This contains short-cuts for editing your text. Press the F1 key to get back to the Narratives.

After viewing or editing the text, press ^PgUp to save and return to the Narratives Retrieval Screen. Next, press the PgUp key to return to the Profile Screen. Finally, press the [Q] key to return to the Main Menu.

REPORTS MENU

The Reports Menu provides on-screen or printed reports.

REPORTS MENU	
1. A600 FAMILY	
2. A40 TOWING FAMILY	
3. REFUELING FAMILY	
4. CRASH FIRE FAMILY	
5. SNOW REMOVAL FAMILY	
6. FULL REPORT (ALL VEH'S)	
7. INDIVIDUAL VEHICLE TYPE	

8. QUICK LIST (Types & NSNs)	

Return To MAIN MENU	
===== SELECT =====	

Figure 39. Reports Menu Screen

The Reports Menu allows viewing or printing only. Vehicles are classified into USAF designated Family Groups. You may select a report based on a single Vehicle Type, Vehicle Family Group, or a Full-Report of all vehicles on file. The Quick List option provides a simple listing of all vehicles on file (types and NSNs)

separated by Family Group.

Items one through five provide reports for all vehicles assigned to the particular family group you choose. Item six strings all five family groups together and produces a full report. Item seven provides a single report based on your choice of vehicle (by NSN).

After selecting one through seven, enter the first year of the 5-Year Outlook (you may choose any year from 89-94). The reports produced by the program incorporate all values for the five-year range selected and the contract narratives on file for the vehicle.

40K LOADER		NSN:3930-00-800-3929CT Life Exp= 8 Yrs				
PART I: CURRENT STATUS		FY89	FY90	FY91	FY92	FY93
A. AUTHORIZATIONS		361	361	361	361	361
B. ASSETS ON HAND		286	286	286	286	286
C. DELTA		-75	-75	-75	-75	-75
PART II: DEPOT						
A. MEETS REPLACEMENT CRITERIA		181	154	147	120	107
B. CONSIDER FOR RETIREMENT		0	0	0	0	0
C. PLANNED DEPOT OVERHAUL		27	26	27	0	0
D. PLANNED DEPOT REMANUFACTURE		0	0	0	0	0
E. TOTAL DEPOT (C&D)		27	26	27	0	0
F. REMAINING ASSETS MEETING REPLACEMENT CRITERIA		154	128	120	120	107
PART III: INTEGRATION						
A. AUTHORIZATIONS		361	361	361	361	361
B. OVERAGE/SHORTAGE		-75	-75	-75	-75	-75
C. NEW ASSETS (PROJECTED BUY)		0	0	0	0	0
D. DEPOT REBUILD		27	26	27	0	0
E. DELTA		-75	-75	-75	-75	-75
PART IV: NARRATIVE/NOTES						
Current plans are to enhance the 40K situation through the procurement of the 60K Loader. Milestones for the 60K acquisition are as follows:						
Apr 90: Award Development Contract						
Nov 92: Source selection						
Feb 93: Award Production Contract						
Feb 94: First Unit Delivery						
Prod contract = 224 units with option to procure 101 additional units.						

Figure 40. Profile Report

The "QUICK-LIST" option provides a useful listing of names, NSNs and life expectancies for a single family group or all vehicles on file (by family). Here's a QUICK LIST:

Table 3. Vehicle Quick List

VEHICLE TYPE	NSN	LIFE
** FAMILY GROUP: C		
TRK FIRE CRS P-19	4210-00-406-9615	12
WATER TRK P-18	4210-01-137-5970	12
TRK FFGT CRS P-10	4210-00-540-2734	10
TRK FFGT PMR P-22 (P-12)	4210-00-224-4564	15
TRK FFGT PMR P-24 (P-8)	4210-00-233-1538	16
CRASH TRUCK P-15	4210-00-377-9412	12
CRASH TRUCK P-23 (P-2)	4210-00-702-6801	12
CRASH TRUCK P-20 (P-13)	4210-01-012-7147	10
TRK FFGT HIGH-REACH(P-21)	4210-01-057-0696	15
TRK FIRE MINI PUMPER	4210-01-241-3273	8
** FAMILY GROUP: L		
STRADDLE CRANE 50K (ATR)	3810-01-208-0996CT	10
STRADDLE CRANE 75K (NON-ATR)	3810-01-208-3338CT	10
25K STANDARD LOADER	3930-00-955-3293CT	10
10K STANDARD FORKLIFT	3930-00-856-6897CT	12
WBEL (WIDE BODY LOADER)	3930-01-069-1026CT	10
10K AT FORKLIFT	3930-00-488-9695CT	10
13K AT FORKLIFT	3930-01-126-0457CT	10
25K TACTICAL LOADER	3930-00-416-9521CT	8
40 FT ROLLERIZED TRAILER	2330-01-094-0007	25
40K LOADER	3930-00-800-3929CT	8
** FAMILY GROUP: R		
REFUELING VEHICLES R-5/9/11	2320-00-433-5696	10
** FAMILY GROUP: S		
SNOW PLOW TRK 5400 GVW	3825-00-443-7657	13
SNOW REMOVAL UNIT 3000 TPH	3825-01-096-5554	12
SWEEPER ROTARY BLOWER	3825-01-171-2798	7
TRK SNOW RML MLTPH 2000 TPH	3825-01-205-0450	12
** FAMILY GROUP: T		
TRAC ACFT TWG MB2	1740-00-143-8464YW	16
TRAC ACFT TWG MB4	1740-00-580-7990YW	16
TRAC ACFT TWG U-30	1740-00-101-9256YW	15
TRAC TOW SUPPORT EQUIP	1740-01-068-8945YW	12

For on-screen reports, select [S]; for printed reports, make sure your printer has paper, is "On-Line," and select [P]. Once the on-screen report starts scrolling, press ^S to stop the scroll. To resume, press the <enter> key. After reports are displayed, press <enter> to return to the Reports Menu. Press [Q] to return to the Main Menu.

UTILITIES MENU (Main Menu Selection #3)

The Utilities Menu allows you to add, edit, or delete vehicles on file or update the Master File.

AVMP UTILITIES MENU
1. ADD VEHICLES TO FILE
2. EDIT EXISTING VEHICLES
3. DELETE EXISTING VEHICLES
4. UPDATE MASTER FILE
[Q]uit - Return to Main Menu

Figure 41. Utilities Menu Screen

Enter Vehicle data in blocks () shown----

ADD VEHICLE
VEHICLE TYPE: ()
National Stock Number: () Example: 3930-00-800-3929CT
Life Expectancy: (1 through 99 Years)
Family Group: (Select C L R S or T)
[C]=CRASH/FIRE [L]=MATERIAL HANDLING (463L) [R]=REFUELING [S]=SNOW REMOVAL [T]=TOWING
IS DATA CORRECT? [Y]es= SAVE * [N]o= Re-Enter [Q]uit to Utilities Menu (Lose Changes)

Figure 42. Vehicle Add Screen

ADDING VEHICLES

Enter the vehicle type (nomenclature), the NSN, life expectancy, and family group. Add narratives following the same procedures outlined in the "Updating Contract Narratives" section of this guide. To add acquisition, availability, or depot information return to the Main Menu

and select the Vehicle Profiles option [1]. If the vehicle you wish to add already exists, you must choose whether or not to overwrite the existing information.

EDITING VEHICLE INFORMATION:

ENTER NSN OF VEHICLE YOU WISH TO EDIT
ENTER STOCK NUMBER: - - - - -
Example: 3930-00-800-39290T
Please Include ALL Numbers & Letters

Figure 43. NSN Selection/Edit Screen

Enter vehicle NSN. This will call up the vehicle type, NSN, life expectancy, and family group for the vehicle selected. Make all necessary changes and confirm that the new data is correct.

* EDIT VEHICLE *
VEHICLE TYPE: 80X LOADER
National Stock Number: 1111-22-333-4444YC Example: 3930-00-800-39290T
Life Expectancy: 20 (1 through 99 Years)
Family Group: L (Select C, L, R, S, or T)
(C)=CRASH/FIRE (L)=MATERIAL HANDLING (463L) (R)=REFUELING (S)=SNOW REMOVAL (T)=TOWING
IS DATA CORRECT? [Y]es= SAVE * [N]o= Re-Enter [Q]uit to Utilities Menu (Lose Changes):

Figure 44. Vehicle Edit Screen

Edit narratives following the same procedures outlined in the "Updating Contract Narratives" section of this guide.

DELETING VEHICLE INFORMATION:

Enter NSN for vehicle you wish to delete. If vehicle is on file, the current data will appear. This step is identical to the "Edit Vehicle" procedure above. If the NSN is found, you are asked to verify the vehicle as the correct one to delete. Choose [Y] only if you are absolutely sure you wish to permanently remove this vehicle from the file.

DELETE THIS VEHICLE? [Y]es to DELETE * [N]o to Re-Enter NSN
[Q]uit to MAIN MENU: █

Figure 45. Delete Confirm Screen

Updating the Master File:

Important! AVMP must be set up on your system's hard drive during this routine. The hard drive Master File will be updated with information from transaction files contained on 5.25 inch floppy disks. The transaction disks must contain the following three files:

Vehicles.dbf Vehicles.dbt NSN.ndx.

If these files are not found in the transaction file disk, a warning screen will appear. Press <enter> to return to the DOS path screen--you may then quit to the MAIN MENU.

Also, you must enter the full Dos path used to set up AVMP on your machine. For example, "C:\AVMP" (the default setting) defines the AVMP directory located in the <C> Drive as the Dos path).

PLEASE INSERT TRANSACTION FILE
DISKETTE IN DRIVE <A>
* C A U T I O N *
ALL RECORDS IN THE MASTER FILE
WILL BE OVERWRITTEN WITH NEW DATA!
PRESS [Y]es TO CONTINUE
or [Q]uit to MAIN MENU" █

Figure 46. Update Routine Caution Screen

After entering the Dos path and verifying that you wish to continue, keep one final point in mind -- all existing data in your Master File will be overwritten with new data from the transaction disk. This process will be carried out for all vehicles with matching NSNs. Any records contained in the transaction file which were not previously found in the Master File will be added during this procedure. Again, this is a dangerous procedure which could have disastrous consequences on you Master File if disk management procedures are not followed. Please be careful!!

* * * * *

AVMP was written using Ashton-Tate™ dBase III Plus. This manual and accompanying software were developed at the Air Force Institute of Technology as part of a Master's Thesis presented to the School of Systems and Logistics. Both are intended for official Air Force use and may be freely copied by authorized users. The complete thesis by 1Lt Hans Garcia is catalogued under AFIT/GLM/LSM/89S-23.

* * * * *

Tutorial - Welcome to AVMP!

AVMP (Main Menu)

Vehicle Profiles -used to change vehicle quantities during
selected years.
Reports -used to View On-Screen or Print Out Reports (cannot
make any changes)
Utilities -used to Add New Vehicles, Edit, or Delete
information already on file (cannot Print file).

Practice the following procedures:

1. Select Utilities Menu [3]

Select Add Vehicles [1]; enter the following
information:

Type: R80 Refueler
NSN: 1111-22-333-4444
Life: 20
Family Group: L

Enter the following information in the Narratives/Notes:

R-30 Refueler
20 units will be delivered in 1990.
(Hint: Press Ctrl + PgUp keys to save Narratives.)

Return to Main Menu [Quit]

Add another vehicle; repeat the above using the following
information:

Type: R90 Refuel Truck
NSN: 3333-44-555-6666
Life: 20
Family Group: R

This vehicle contains no Narrative/Notes information.

2. Select Vehicle Profiles Menu via Main Menu [#0]

Note the information at the bottom of the screen-
select [M] and manually enter NSN for the R80 Refueler from
(Step 1) and review Five-Year Outlook starting from 1989.

Press [U]pdate key to enter FY 89 values as follows:

Part	IA	Authorization	100
	IB	Assets On Hand	50
Part	IIA	Meet Repl Crit.	30
	IIC	Depot Over.	20
	IID	Depot Reman.	20
Part	IIIB	Over/Short	10
	IIIC	New Assets	5

If amount in cell is correct press Enter to keep that amount.

OOPS! Go back and change Part IIA from 30 to 25; all remaining values are the same.

OPTIONAL: From this screen (Profiles Screen), [P]rint out a report for this vehicle.

3. [Q]uit to Main Menu.

Select Reports Menu [2].

[P]rint out an individual report [7] for the R80 Refueler starting with 1989 Five-Year Outlook. Follow directions on the screen.

4. Return to Main Menu [0].

Select Utilities Menu:

Edit R80 Refueler information [2] as follows:

Family Group: Change to R
Life: Change to 25 years.

All other fields remain the same.

5. Return to Main Menu [0].

Select Reports Menu [2].

Select Refueler Family Vehicles [3]. Follow directions on screen.

Notice how the two vehicles you have just input have been "indexed" or placed in numerical order (by NSN) within the "Refueler" Family Group.

After Report stops scrolling, the following message will appear: "That's all the Refueling Family Reports" press the Enter key to return to Main Menu.

6. Select Utilities Menu [3].

Select Delete Option [3].

Enter NSN 111-22-333-444 and confirm that this is the R80 Refueler when asked, "Do you wish to delete another?" Select [Y]es and enter NSN 3333-44-555-6666. Confirm that this is the R90 Refuel Truck.

[Q]uit to Main Menu

ALL DONE! CONGRATULATIONS!!!!

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Abstract

The purpose of this study was to develop a computer based database management system which could be used to automate the labor-intensive tasks performed by vehicle program managers at Warner Robins Air Logistics Center. With the introduction of the Air Force Vehicle Master Plan in May 1989, Program Managers (PMs) now had a single source of information on the vehicle fleet, to be used in developing, justifying and prioritizing the vehicle programs required to meet the Air Force Vehicle needs.

Five research questions were addressed in determining the cost, training and equipment advantages to the Air Force by automating such new procedures. The research confirmed that the methods used by the PMs could definitely be supplemented by the use of a microcomputer based program which could be run on existing equipment.

The author was able to automate the USAF Vehicle Master Plan and developed the Automated Vehicle Master Plan (AVMP) using Ashton-Tate's dBase III Plus™. The original AVMP maintained 29 sortie-generating vehicle types on file.

The author designed, tested, debugged and tailored the final product into a stand-alone DBMS applications program which can be used on any IBM™-compatible microcomputer, operating on a hard disk system or from a single 5.25 inch floppy disk. The appendices include a complete listing of the program code, a user's manual, and a tutorial to assist the novice user.

Although written for WR-ALC/MMVV, the program can be used at a MAJCOM or base level and allows for expansion to an estimated 200 vehicle types. Routines to add, edit and delete vehicles are included as well as the capability to produce on-screen and printed reports from the vehicles on file.

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